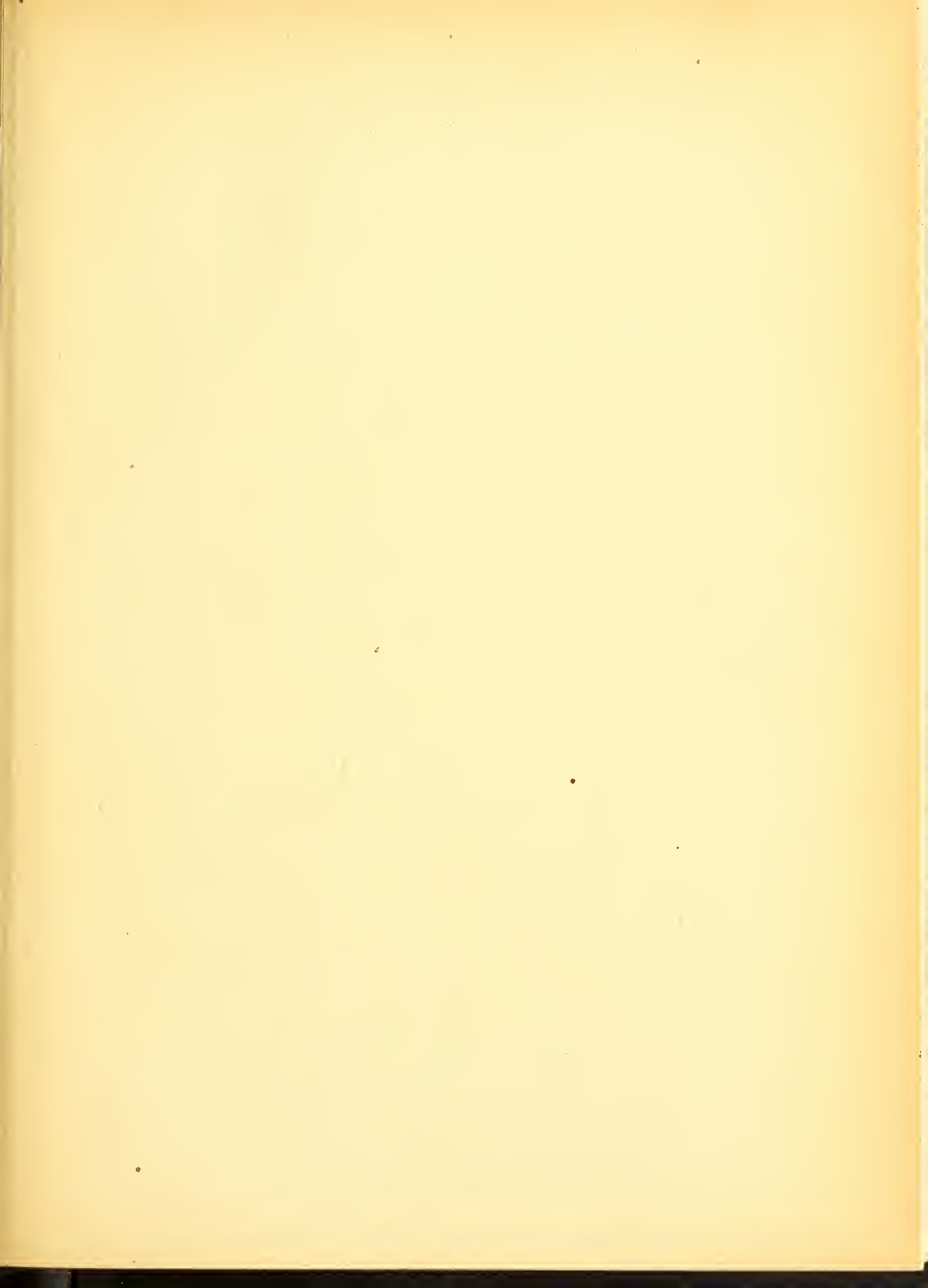


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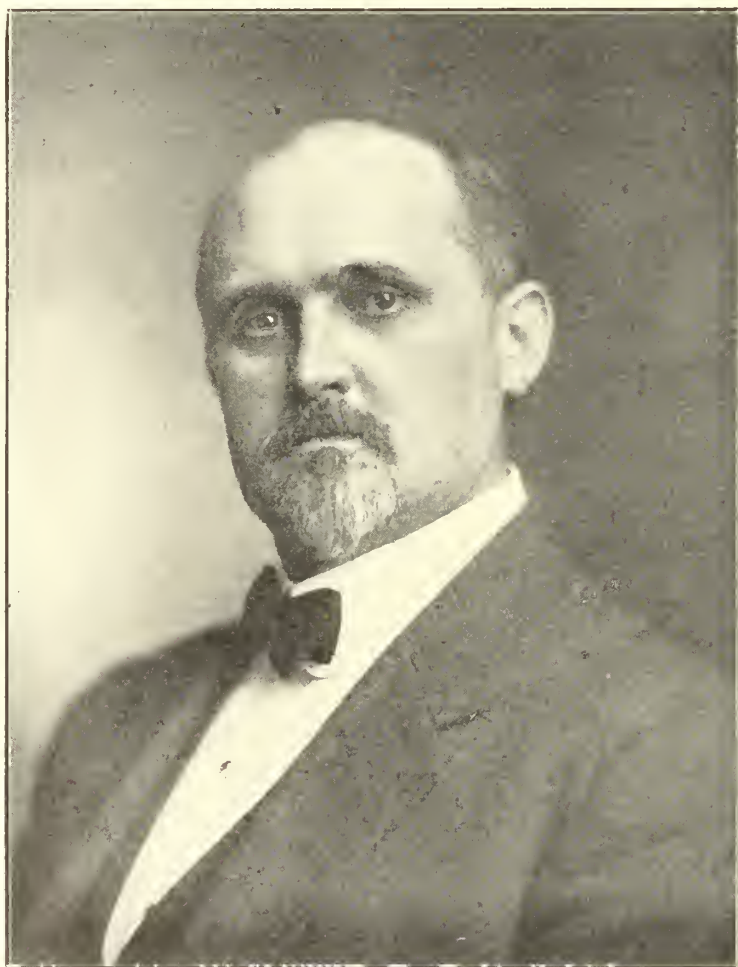
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DR. J. A. WITHERSPOON.
RETIRING PRESIDENT.



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THE JOURNAL

OF THE

TENNESSEE STATE MEDICAL ASSOCIATION

DEVOTED TO THE INTERESTS OF THE MEDICAL PROFESSION OF TENNESSEE

ISSUED MONTHLY under Direction of the Trustees

PERRY BROMBERG, M. D., Editor and Sec'y

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NUMBER 1

PRESIDENT'S ADDRESS

DR. J. A. WITHERSPOON.

"Gentlemen of the Tennessee State Medical Association—Custom demands that your President make an address and the local committee has decided that this one should be also to the public. Therefore, I have selected a subject, 'The Physician in Public,' as being suitable to the occasion.

"In the first place, we are in a measure public men, in that we should be the guardians of the health and lives of the people. In the second place, a doctor should stand for everything that is right and uplifting in his commonwealth. And his standing in his community should be such that his influence is great and widespread. Belonging to a profession of highest ideals and greatest responsibilities in which his opportunity to do good is as great, if not greater, than the ministry, the people have a right to expect a great deal from him. At the same time they owe a great deal to the doctor and should uphold his hands in every way.

"It is high time that the press, law-makers and the people should recognize the fact that ours is the most self-sacrificing profession in the world, and quit this idle talk of 'doctors' trusts' and all other equally fallacious and untrue statements, which only retard our efforts in their behalf, and give to the enemies of mankind a weapon to be used to retard progress and keep from the people the wonderful and life-saving methods which modern medicine offers

in the way of preventing disease and insuring that development, mentally and physically, so necessary to the welfare of mankind and good citizenship.

"To illustrate: In our present Legislature several bills have been introduced of the greatest importance to our people; the benefits of which citizens of other states are enjoying and receiving the protecting care to which they are entitled. Our state is far behind other states in all these particular subjects. These bills do not benefit the profession, except in the greatest of all remunerations, and that is a consciousness of duty well done.

CHARGES MADE.

"We have been subjected to charges of all kinds of crimes and misdemeanors by means of pamphlets circulated by an alien, who suddenly is so much in love with our people that he rushes to their rescue from the North as a representative of the National League of Medical Freedom—whatever that is. I understand that it is composed of the patent medicine interests and others which have been the vampires that sucked the blood of our people so long that they have grown arrogant and dictatorial to the extent that they assume to themselves all the virtue and wisdom of the age and ruthlessly and falsely make charges against the medical profession.

"Protect our people against the men who brought them into the world. The men who live here and have been with them in sickness and sorrow? Yes, gentlemen, they

could protect our people against their doctors, and do it by blackening their reputation in the eyes of those among whom they live, and to whom they are bound by the ties of love and gratitude. To disturb or lessen the close ties and confidences so necessary to the successful enforcement of proven laws of prevention between doctors and their people is criminal.

"Our duties to the public do not end here, but to see that none but safe, moral and competent physicians are permitted. To practice medicine is a very sacred and grave responsibility, and the people have a right to expect this protection.

"How can this be regulated? I answer in two ways. Just by insisting that none but high-grade, well-equipped medical schools for the training of the young men be tolerated. Second, by the suggestion of such laws that none but moral and well qualified doctors can be licensed to practice. The passage of good laws and the appointment of strong and competent men to enforce them would soon rid this country of charlatans and ignorant pretenders and strike the death blow to quacks and venders of such nostrums, whose stock in trade is the cupidity and ignorance of the people.

LOW CREATURES.

"If there is any creature any lower than he who traffics in the ills and afflictions of his fellow-man, or he who withholds any remedy or treatment that might alleviate human suffering or assist in any way to save human life, it has never been my fortune to meet him. Here we are misunderstood and often accused of selfish motives when we raise our voices in protest against such fads or harmful practices by which individualism and often life is sacrificed on the altar of ignorance.

"Intelligent people take patent medicine or blindly submit to all kinds of irrational and unscientific treatment by men who know little or nothing of the human body and less of the diseases of which it is heir, and this, too, in the enlightened age when medicine is rapidly becoming an exact science.

"It is not Utopian to claim that with proper laws and the co-operation of the people to forever stamp out all epidemics like cholera, yellow fever, smallpox and other infectious diseases, if the profession of medicine could only educate the public in these all-important life-saving methods of prevention, so well known and of proven practical value. But if we cannot get the confidence of our legislative body and have proper laws passed and enforced, both state and national, we cannot save people against themselves. As long as a combination of patent medicine interests can defeat bills like the Owens bill, to establish a National Board of Health for the protection of all invasions of foreign epidemics as well as the enforcement of proper laws of hygiene and sanitation."

The speaker stated that vaccination, when first introduced, met with violent opposition, the same of the Pasteur treatment and other scientific and well established methods. He concluded by saying, "I could go on indefinitely with the difficulties in the way of progress, that a less earnest and God-given profession would have given up and ceased to expose their lives and declined to continue to sacrifice all comfort and even life under such seeming ingratitude. But having a motto which the Son of God applied to those who were crucifying Him on the cross, 'Father, forgive them. They know not what they do,' will save our people in spite of opposition."

"But it has come to the point where the medical profession must stand up and claim the right that is theirs, namely, the right to tell the people of this country how and when to protect themselves against the great epidemics, the great infections of this country, and if I were to pick out one of the most serious invading hosts of to-day that is threatening the lives of the people even more than epidemics themselves; I could not pick out in my opinion a more vicious epidemic than the importation of a foreigner into our midst to criticise the profession of medicine that has had the proud name in this country of saving hundreds and thousands of lives at the sacrifice of members of its own profession; a man

who has come down here and is pleading for medical freedom which only means to protect them in their nefarious commercialism and isms and pathies of all kinds. (Applause).

Fellows of the Tennessee State Medical Association: There is not a man sitting here to-night, engaged in the practice of medicine, who does not know that this particular claim that is being urged all over this country about the medical trust and the American Medical Association being the father of it, is so ridiculous, is so absolutely preposterous, that no sane man would use it as an argument except for evil purposes of his own. I will tell you why that name was given it, because for the first time that great body of organized doctors had the daring and the bravery to attack in the very citadel, the strongholds, these nefarious practices which have been carried on all over this country as if they were not only dictators to the people, but they have had the impudence to walk into a doctor's office with a little bottle of medicine and tell him how to treat every kind of disease without the slightest knowledge or idea of pathology, etiology or symptomatology. So long as the medical profession tolerates such men as these, so long as they lose sight of the fact that every man is a law unto himself, or so long as we will permit men in any position to dictate to us how to manage diseased conditions and formulate concoctions for the purpose of trying to treat or control any kind of disease, just so long will the profession deserve the discredit, and just so long will we receive it. But, gentlemen, the time has come when with the bright scalpel of scientific investigation, the medical profession has placed itself on a par with the great sciences of the age. We have gotten to the point where we need no suggestion except from the microscope, from the chemical laboratory, from physiological laboratory, and the knowledge that is necessary shall be given in the best school—that is, the school of experience—in this country. I say to you, that whenever the people of this country rise above the narrow and petty little dogmas and fads and faddism, and adopt the views and issues of the medical profes-

sion, then you will find that this country will blossom like the rose. Epidemic disease will no longer attack our coasts, and no longer will these epidemics or infectious diseases attack our people. Take the delicate little child of the poor sent to our public schools with enlarged and hypertrophied tonsils, with adenoids, is there a man who has not witnessed that terrible destruction, that lack of development, both mental and physical, that comes to the child because the cause has not been removed, but which could be very easily done? Is there a man who has not witnessed a child at school, bright and intelligent, become so almost like magic as soon as these impairments were rectified? Is there a man who has not witnessed repeatedly children going into our schools with infectious diseases? When we can establish the inspection of school children, and do it without men walking around this country claiming that the medical profession simply want to learn anatomy at the expense of our school children and making indecent exposure of their persons, we will accomplish something. When we stand as a profession and permit such a thing as that, especially coming from a man whose ideas are saturated with a filthy commercialism, we shall deserve no more the high position we occupy.

For my part, as long as I live I shall fight such things, because upon these things depend the injurious effects and the division between the people and doctor, and so long as that division is kept up and the people are not educated up to act with the doctor, just so long will all these conditions, which we know are easily remedied, be rampant in our midst, and just so long will the people suffer because of ignorance and prejudice. There are many things I could enumerate which are a menace to the health and development of our people, but time will not permit me to do so.

Now, gentlemen, of the Tennessee State Medical Association, the time has come when you should act; when your duty and self-respect demand that you rise in your

might. We have not a Legislature that is bad or ignorant. Our legislators do not know what the profession wants and how important their demands are. I believe they are men of integrity; I believe they are men equal to the occasion, and I believe if this body to-morrow morning will, as we have promised to do, meet here at 9:30 and march two hundred and fifty strong and let it be emblazoned on our banner, and especially upon our hearts, that we are working for the welfare of our people now and forever, we cannot lose. (Applause).

As your retiring President I desire to say that the profession stands higher and with more unselfish solidity than ever before and the people are being educated and are in a most receptive frame of mind. Therefore it is not too much to predict that in the near future a unity of action and thought will be so general that it will be possible for all the laws of health to be passed and enforced. Then and not until then will our profession reach that sublime and just station in life which it deserves. "Well done thou good and faithful servant."

TENNESSEE STATE MEDICAL ASSOCIATION.

Minutes of the seventy-eighth annual meeting, held at Nashville, April 11, 12 and 13, 1911.

FIRST DAY—MORNING SESSION.

Tuesday, April 11, 1911.

The Association met in the Assembly Hall of the Hermitage Hotel, at 10 a. m., and was called to order by the Chairman of the Committee of Arrangements, Dr. M. M. Cullom, of Nashville, who introduced the Rev. J. S. French, of Nashville, who offered prayer.

Dr. Cullom introduced Mr. Joseph Frank, President of the Board of Trade, who delivered the following address of welcome:

ADDRESS OF WELCOME BY MR. FRANK.

Mr. Frank said:

Mr. Chairman and members of the Ten-

nessee State Medical Association: It is rather presumptuous on my part to endeavor to say anything to you that may interest you to any degree in matters appertaining to your honored profession, as my position in life is so entirely different from your own. However, representing the commercial interests of this city as President of the Board of Trade, I am going to say something regarding what I consider of vital importance to the physician and merchant. There is no one that is looked upon in the home of every citizen, be he high or low in the social standing of the community, with more respect than the family doctor, not even the minister of the gospel, as his mission is to lead his charge in the right direction; but the physician is entrusted with the health of the family, beginning with the bringing to the light of day the hope and future of each household, and, then, step by step, watching its every physical development until mature age. What an honored position—what a trust and confidence is placed in you. Verily, there is no other position, in my opinion, that is looked upon with such implicit confidence and trust.

You all know that every commercial organization of to-day is striving to have more population, and every effort of theirs is put forward to increase immigration, that being the very foundation of larger and increased business.

There are hundreds and hundreds of our citizens leaving our midst every year for other sections of this country, seeking to better preserve their health. I am not going to give you figures of how low our state averages in several of the dreadful diseases that man is heir to, as you are better acquainted with those statistics than I am. But, right in this connection, you could be of more help to the upbuilding of the commercial interests of any community than any other agency that I know of by disseminating the advantages and educating the masses in order to get the minimum fatality.

The problem of sanitary conditions and the best modes of living are now in the up—the best modes of living are now uppermost in the minds of all regulated municipali-

could be of more help to advance those regulations than the physician of any community. The people will listen to you with more interest and trust more to your advice in matters of this kind than anybody else, not even excepting the officials of state or towns.

I don't know the objects of your organization, but I honestly believe that if you will give these matters your earnest attention during your deliberations, you will be of incalculable benefit to the community you live in, and that nothing that you could do would be of more benefit to the upbuilding of our state's resources.

Now, I wish to extend to you, as representative of the commercial interests of our capitol city, a hearty welcome, trusting that your stay in our midst will be a pleasant and enjoyable one, and that when you return to your homes, I trust you will think of us as we do of you. I thank you. (Applause).

ADDRESS OF WELCOME ON BEHALF OF DAVIDSON COUNTY MEDICAL SOCIETY AND NASHVILLE ACADEMY OF MEDICINE BY DR. R. E. FORT, OF NASHVILLE.

Dr. Fort said:

Mr. Chairman and Gentlemen: Eighty-one years ago, within speaking distance of this hotel, the first President of the State Society, Dr. Roane, the son of one of the former governors of Tennessee, welcomed this society to the city of Nashville on behalf of the profession of our city. Nearly a century has passed since then, and I hope that the spirit of welcome and hospitality has improved with the generation that have come after. At all events, it has been my pleasure and privilege to see a great many meetings of this society here, and when I observe its growth, when I observe the roll as many of you do, it makes me believe and know that what Lord Rosebury says, namely, that those who are content are lost, is true. The spirit that this society has evidenced, at all times, for work and striven for better things in the profession is the cause that has brought about just what we have here to-day in our magnificent State Medical Association.

I have been commissioned by the Chairman of the Committee of Arrangements on behalf of the David County Medical Society and the Nashville Academy of Medicine to welcome you to our city and to our homes. We hope your stay here will be a pleasant one. We hope your deliberations will be as beneficial as they have been in the past. We hope you will work, and that the results of this meeting will add something to human thought and human science, and that they will inure to the benefit of that class that this profession with single thought are striving to relieve and to help, and on behalf of the Nashville Academy of Medicine and of the Davidson County Medical Society, I wish to extend to you a hearty welcome. We hope your stay will be pleasant, and now I commend you to the labors you are to take up. (Applause).

RESPONSE TO THE ADDRESS OF WELCOME BY DR. BATTLE MALONE, OF MEMPHIS, TENN.

Dr. Malone said:

Mr. Chairman and Gentlemen: It gives me great pleasure on behalf of the members of the Tennessee State Medical Association, to acknowledge our appreciation of Doctor Fort's and Mr. Frank's generous words of welcome and hospitality. You men of Nashville have in the past been in the habit of censuring us for not attending the State Society meetings. Whether this is due to sectional pride, or because we have a stimulus from some other source, I do not know, but, at any rate, I believe we will have a good attendance at this meeting. We are glad to come to Nashville. We as Tennesseans consider it more than the capital of the state. Nashville is known as the Athens of the South. It is noted for its schools and churches and for its high type of citizens. Its great universities exert a power in the intellectual lives of the people, so that I am sure the entire South is proud of Nashville. But we are prouder still of the members of our own profession of Nashville who have achieved greatness. If we go back over the history of the organization we will find the growth of this association has been due very largely to the doctors of Nashville. We have had many

great men in Nashville, members of the medical profession, in the past. We have had such men as Eve, Briggs, and the lamented Douglas, men who have left their impress upon the profession and have contributed a good deal towards the progress of the world. We can but feel a glow of pride in their lofty ideals, and when we contemplate their work and its relation to that for which we are all striving, we can say in the words of Kipling:

"Men bulked big on the old trail;
Our own, the out trail;
They are God's own guides of the long trail,
The trail that is always new."

We take the greatest and deepest interest in the profession which they all loved. These are not fulsome words of flattery, but are from the heart. From the city of Nashville there have come men with such high intellectual and scientific attainments that we feel proud of them and the reputations they bore. We like you for the splendid manner in which you represent the profession, and most of all, we like you all for what you were and are. We are always glad to meet with you. (Applause).

At this juncture, Dr. Cullom introduced the President of the Association, Dr. John A. Witherspoon, of Nashville, who took charge of the meeting.

It was moved and seconded that the program be taken up seriatim. Carried.

Dr. G. P. Edwards, of Nashville, read a paper entitled, "Radium." The paper was discussed by Dr. Savage, and in closing by the author of the paper.

Dr. S. S. Crockett, of Nashville, offered the following resolution, which was unanimously adopted:

Whereas, The health and vigor of our people are the most valuable assets of our country, and every effort looking to the reduction of disease-producing influences and the education of the people with that end in view should have our hearty co-operation and support, therefore, be it

Resolved, That (1) the Tennessee State Medical Association heartily commends the effort of Senator Owen, of Oklahoma, in his effort to promote the passage of national

legislation for the establishment of a National Department of Health.

Resolved, (2) That each member of this Association pledges that he will urge his congressmen and Senators Taylor and Lea, to lend their efforts to the passage of the same.

Dr. R. M. McCowan, of Knoxville, read a paper entitled, "Significance and Surgical Treatment of Uterine Displacements," which was discussed by Drs. Caldwell, Cowden, and, in closing, by the essayist.

Dr. W. M. McCabe, of Nashville, read a paper entitled "Traumatic Perforation of Abdominal Viscera," which was discussed by Drs. Haggard, Crook, Gaines, Shedden, and, in closing, by the essayist.

On motion of Dr. Savage, the Association adjourned until 3 p. m.

FIRST DAY—AFTERNOON SESSION.

The Association re-assembled at 3 p. m., and was called to order by the President.

Dr. H. M. Tigert, of Nashville, read a paper entitled, "Some Remarks Upon Cancer, With Especial Reference To Cancer of the Breast." This paper was discussed by Drs. Roberts, Burch, Malone, King, Newell, Glasgow, Black, Overton, Litterer, Robertson, Witt, and, in closing, by the author.

Dr. B. B. Cates, of Knoxville, read a paper entitled, "Spina Bifida, Based on Several Operations." Discussed by Drs. Crook, Malone, Caldwell, and, in closing, by the essayist.

Dr. Paul F. Eve, of Nashville, read a paper entitled, "Fractures of the Tibia." The paper was discussed by Drs. Crook, Duggan, Cates, and, in closing, by Dr. Eve.

Dr. E. H. Jones, of Murfreesboro, read a paper on "Pellagra, with Report of a Case," which was discussed by Drs. King, Runyon, Litterer, Overton, Breeding, Glenn, Shedden, Rash, Dabney, Cowden, McGannon.

On motion, the Association adjourned until 8 p. m.

FIRST DAY—EVENING SESSION.

The Association re-assembled at 8 p. m., and was called to order by the President.

Dr. O. Dulaney, of Dyersburg, read a

paper entitled, "Need of Reform in Public Schools in Regard to Hygiene and Sanitation; Medical Inspection of School Children; Frequent Inspection of Buildings by a Sanitary Officer; Need of Law Governing School Buildings; Importance of Having Medical Representation on the State Board of Education."

The discussion on Dr. Dulaney's paper was postponed until after the delivery of the President's address.

The President, Dr. John A. Witherspoon, Nashville, then delivered his address. He selected for his subject, "The Physician and the Public".

Dr. Dulaney's paper was then discussed by Drs. Crockett, Price, Bosworth, Howlett, West, Haggard, and the discussion was closed by Dr. Dulaney.

On motion, the Association adjourned until 9 a. m., Wednesday.

SECOND DAY—MORNING SESSION.

Wednesday, April 12, 1911.

The Association met at 10 a. m., and was called to order by the President.

Dr. K. S. Howlett offered the following resolution, which was unanimously adopted:

Resolved, That we, the Tennessee State Medical Association, most earnestly request the Finance, Ways and Means Committee of the House to recommend for passage the following bills:

1. The Model Vital Statistics Bill.
2. Hygienic Laboratory.
3. Medical Inspection of School Children.

Dr. J. Hugh Carter, of Memphis, read a paper entitled, "Surgery of the Intestines with Report of Some Cases." The paper was discussed by Drs. Holtzclaw, Miller, and, in closing, by the essayist.

Dr. Walter Dotson, of Gallatin, read a paper entitled, "Diagnosis and Treatment of Acute Inflammatory Glaucoma." Discussed by Drs. Herron, Dulaney, Cullom, Crawford, Doak, Roberts, and, in closing, by the essayist.

Dr. Duncan Eve, Sr., of Nashville, read a paper entitled, "Report of a Case of Oblique Inguinal Hernia, Complicated by the Un-

usual Condition of Arteriovenous Aneurism."

Discussed by Drs. Holtzclaw, Roberts, and Gaines.

On motion, the Association adjourned until 2 p. m.

SECOND DAY—AFTERNOON SESSION.

The Association re-assembled at 2 p. m., and was called to order by the First Vice President, Dr. J. J. Waller, of Oliver Springs.

Dr. John Overton, of Nashville, read a paper entitled, "Sarcoma of the Stomach, with Report of a Case." Discussed by Drs. Krauss, Dixon, Litterer, Roberts, Breeding and, in closing, by the essayist.

Dr. Thomas Weaver, of Nashville, read a paper entitled, "Two Outbreaks of Typhoid Fever in an Institution Traced To Bacilli Carriers." Discussed by Drs. Litterer, Dixon, and Timmons.

NOTE—There was no report made of the discussion on the papers of Drs. Overton and Weaver, for the reason that the official stenographer was engaged at the time in reporting the proceedings of the House of Delegates.

Dr. Newton Evans, of Nashville, read a paper entitled, "Practical Laboratory Work for the General Practitioner." This paper was discussed by Drs. Timmons, Krauss, and, in closing, by the essayist.

Dr. Deering J. Roberts, of Nashville, offered the following preamble and resolutions, which were unanimously adopted:

Whereas, A preceding General Assembly of the State of Tennessee has placed itself on record by the enactment of "A Pure Food and Drug Law," and made an appropriation that has sufficed so far as to place in working order the above mentioned very essential act, and

Whereas, "We cannot make bricks without straw," nor can an effectual war be waged without a sufficiency of the very essential financial sinews of war, therefore, be it

Resolved, By the Tennessee State Medical Association, representing in their voluntary capacity fully seventy-five per cent. of the

citizens of this great state, that we most respectfully and earnestly recommend that an additional appropriation of not less than ten thousand dollars, and not more than fifteen thousand dollars, be made by the State Legislature now in session for the more satisfactory and effectual execution of this most important work. Be it further

Resolved, That a copy of this preamble and resolutions and recommendation be at once forwarded by the Secretary of this Association to the respective chairmen and committees on Finance, Ways and Means of the Honorable Senate and House of Representatives of the present General Assembly of the State of Tennessee.

Dr. William B. St. John, of Bristol, read a paper entitled, "The Disease and the Man".

On motion, the Association adjourned until 8 p. m.

SECOND DAY—EVENING SESSION.

The Association reassembled at 8 p. m., and was called to order by the President.

Dr. H. C. Curtis, of Algood, read a paper on "The Duty of the Country Physician To the Mother and Child". Discussed by Drs. Gaines, Duggan, Jones, Sanders, Runyon, Campbell, and, in closing, by the essayist.

Dr. William Litterer, of Nashville, followed with a paper entitled, "Salvarsan and the Wasserman Reaction in Sixty Cases of Syphilis".

Dr. E. T. Newell, of Chattanooga, read a paper entitled, "A Simple Method of Giving Salvarsan Intravenously".

Dr. W. Frank Glenn, of Nashville, read a paper entitled, "Treatment of Syphilis by Mercury and Salvarsan."

These three papers were discussed together by Drs. Holtzclaw and Krauss, after which the discussion on these papers was postponed until Thursday morning.

On motion, the Association then adjourned until 9 a. m., Thursday.

THIRD DAY—MORNING SESSION.

Thursday, April 13, 1911.

The Association met at 10 a. m., and was called to order by Dr. Waller.

Secretary George H. Price read a report

of the proceedings of the House of Delegates.

Dr. Bosworth moved that the Association concur in the report of the House of Delegates. Motioned seconded and carried.

On motion of Dr. Roberts, Dr. Savage and Dr. Glenn were appointed a committee to conduct the President-elect to the platform.

Dr. Cook moved that a committee of the Tennessee State Medical Association be appointed at this time, with Dr. Howlett as chairman, to wait upon the Middle Tennessee Educational Association which convenes here to-day to explain the situation with reference to the medical inspection of school children and enlist their active sympathy and co-operation.

Motion seconded and carried.

The President appointed on this committee Drs. Howlett, Krauss, and Cook.

The discussion of the three papers on Salvarsan was then resumed. It was further participated in by Drs. Glenn, Litterer, and the discussion closed by Dr. Newell.

Dr. C. F. Anderson, of Nashville, read a paper entitled, "When Does the Gonorrheic Cease To Be Infectious?"

Discussed by Drs. Bromberg, Litterer, Glenn, Timmons, Rash, Newell, and, in closing, by the essayist.

At this juncture, the President-elect, Dr. C. J. Broyles, was escorted to the platform, and introduced by the retiring President, Dr. Witherspoon.

Dr. Broyles, in accepting the Presidency, said:

Dr. Witherspoon and Members of the Tennessee State Medical Association

I have not had the opportunity to prepare a formal speech, but I sincerely thank you for the distinguished honor you have conferred upon me. To be able to stand in line with a long list of predecessors, some of whom I see before me, such as Drs. Savage, Eve and Glenn, is an honor more than I am worthy of, and I cannot refrain from attributing it, possibly, instead of to merit, to the matter of availability and topography. (Laughter).

I have the assurance, gentlemen, that the three medical bills in which we are all so much interested will be rushed to a speedy

passage. I believe it is our duty to solemnly insist on our representatives acceding to our wishes, and particularly to the wishes of those men who have given these things unremitting study, and it is our duty to stand before them and urge that these bills pass. I believe, furthermore, it is our duty to begin to-day to have a first-class meeting at Chattanooga a year from now, and I will promise you to finish my speech in April, 1912. (Laughter and applause).

Dr. Duncan Eve, Jr., of Nashville, read a paper entitled, "Injuries of the Head". This paper was discussed by Drs. Crook, Newell, Gaines, Witt, Billington, and, in closing, by the essayist.

Dr. William Krauss stated that Drs. Howlett, Cook and himself as a committee had appeared before the Middle Tennessee Teachers' Association, and that Dr. Cook in a ten minutes' speech spoke on the bill now pending before the Legislature for the medical inspection of school children with telling effect, and he was satisfied that the work of the committee had been successful in every way.

On motion of Dr. Deering J. Roberts, the report was accepted and the committee discharged.

Dr. J. J. Waller, of Oliver Springs, read a paper entitled, "Practical Points on Traumatic Laceration of the Deep Urethra".

Dr. Savage: Mr. President, it is well known that in this part of the country I am fighting for law enforcement and for temperance, and I never fight under cover. Some things have been said at this meeting that are incorrect, but the question is one of information and veracity. In the first place, a year ago there was planned a banquet for the Academy of Medicine, and it was said that I defeated that banquet, and I asked how? And the answer was, in the presence of some members here, I had said that if the banquet was held and liquor was furnished I would have the banquet hall raided. I said no such thing. When one of the young men came to see if I was going to attend the banquet, the very fact that the price had been doubled led me to ask the question; "What are you going to have? The price is so high." He replied,

"Nothing unusual." I said to him, "Are you going to have liquor?" He said, "No. The Academy has not decided to have liquor." I said to him, "Very well; here is the three dollars." As time went on I heard nothing more about it until the telephone rang and a confrere said, "I see you have taken tickets for the banquet. Do you know that we are going to furnish liquor to everybody who wants it?" I said to him, "I had been told it would not be served." He said, "What are you going to do about it?" I said, "I will attend." He was astonished to hear me say that. A little later, some one suspecting I had something up my sleeve asked me something about it. I said, "Yes, I am going to attend, and if I see liquor served at the banquet I shall go before the grand jury and testify on that point, and take the name of every man who can be called before the grand jury to corroborate my testimony. That is my part of it."

The next thing I knew the thing was called off. I did not get to go before the grand jury, which would have delighted me if the thing had occurred.

Now, Mr. President, I was not informed until last Saturday that beer would be served last night. If I had followed my impulse I would not have made these remarks to-day, but in order that there may be no hard feeling on the part of anybody I must say that I am astonished at that. I called up the Chairman of the Committee of Arrangements and asked him and he told me that beer was going to be served. I said to him, I am sorry of that, and I asked him whether he could not reconsider the matter and cut the beer out. He replied, "I do not think we can, but I will bring it before the committee." The next thing I knew they were going to serve beer, and that they were going to purchase this beer themselves outside of the borders of the city, and let it be served here. Then, I said, "If the beer is to be served in the name of the Nashville Academy of Medicine, I have my mind made up as to what I will do, but if the Academy has authorized it, I could do nothing except to file a protest. But if the Academy has not authorized the beer I would swear out

a bill of injunction restraining them from serving beer in the name of the Academy of Medicine." But I was assured that the Academy had nothing to do with it, and was informed that the beer and the smoker were being furnished by some individuals to their friends from the neighboring towns and cities. Of course, under the circumstances, I would not have any moral or legal right in proceeding to have an injunction issued, and that feature was dropped.

Now, suppose that matter had been brought before the Academy, I would have fought it in the Academy to the end, because I know that the stand I have taken against liquor would not justify me in keeping silent. I should have raised my voice against it. If in spite of a protest in the open Academy meeting, it had been passed that there should be beer served last night, I would have filed my protest and made it a matter of record, and that would have been the end of it.

Now, Mr. President, these are facts of which I am not ashamed. Everybody who knows me knows that I have always had at heart the scientific uplift of the profession. Everybody knows that I am and have been for the social uplift of the profession. Everybody knows that I have been for the moral uplift of the profession. On my past record I stand, and from that past record I hope I shall never fall.

I hope you will look at this button (indicating) and let the blue represent a united profession. Look at the gold lettering and let that represent what this great organization stands for—character; gold for charity and the white stands for temperance. So I hope the medical profession will stand solidly for all these things: unity, blue; charity, gold; temperance, white. I am sure, there is not a man who can take any exception to the statements I have made. They are absolute facts. Anything to the contrary is not true, and yet some men have thought they were true, and I want to put the matter before you in the proper light, and to say that what I have said is absolutely correct, and then I stand to bear any odium or any disgrace personally that may come to me from it. (Applause).

Dr. W. C. Billbro: I want to offer a suggestion which I think will appeal to the members of the Association. It is this; our papers are getting so numerous that it is impossible for one stenographer to attend and report the proceedings of both the general meetings and the House of Delegates and enable us to get through with the program. At the Chattanooga meeting next year, I would like to have the officers empowered to secure the services of a local stenographer to report the proceedings of the House of Delegates, and have our official stenographer report the scientific discussions. If this is done, we will be able to get through the scientific program, and every member who is down on the program to read a paper will have an opportunity to do so. Any ordinary stenographer, it seems to me, will be able to report the minutes of the House of Delegates, but it requires one who is well versed in medical terminology to report the discussions.

I make that as a motion. Seconded.

Dr. Deering J. Roberts: I think the Board of Trustees have the authority to make such an arrangement, and to incur such an expense. What Dr. Billbro has said is true. We want our official stenographer for the scientific work, so that he can be in attendance upon the general meetings at all times, and in line with what Dr. Billbro has said, I move as an amendment that the Board of Trustees be authorized to procure such additional stenographic assistance as may be needed at the next and subsequent meetings of this Association.

The amendment was accepted, seconded and carried.

On motion, the Association adjourned until 2 p. m.

SECOND DAY—AFTERNOON SESSION.

The Association reassembled at 2:30 p.m. and was called to order by the President.

Dr. W. D. Sumpter, of Nashville, read a paper entitled, "Appendicitis with Concurrent Typhoid Fever." Discussed by Drs. Gaines, Timmons, and, in closing, by the author of the paper.

Dr. E. A. Timmons, of Columbia, read a

paper entitled, "The Relation of Food To Disease." Discussed by Dr. Gillespie.

Dr. John A. Gaines, of Nashville, read a paper entitled, "Vaginal Hysterectomy, Indications for and Technic of." Discussed by Drs. Gillespie, Cowden, Sumpter, and, in closing, by the essayist.

The following papers were read by title:

"Pneumothorax," by Dr. Joe Clifton, Hickory Valley; "The Diagnosis of Tumors of Bones," by Dr. R. J. McFall, Cumberland City; "The Use of Normal Salt Solution," by Dr. C. N. Cowden, Nashville; "Arteriosclerosis," by Dr. W. J. Mathews, Johnson City.

Dr. Deering J. Roberts: Fifty years ago this southern country of ours entered upon a remarkable epoch in its history. History was made for four consecutive years of which every southern citizen can well be proud, and some of the remarkable and commendable history made in that time was made by members of the medical profession. I was but an humble integral part of the medical profession at that time, and I do not hesitate to speak in fulsome terms about the record made by the southern doctors in 1861 to 1865. Standing at the head of medicine in the South was one man, born in South Carolina, a graduate in medicine in his native state, entered the United States army as assistant surgeon, with the rank of surgeon of the United States army. Early in '61, like great General Robert E. Lee, he resigned his commission. Samuel Preston Moore was selected by Jefferson Davis, Confederate Surgeon of the Army. He had but few associates who had experience in military surgery. To him was designated the task of organizing a medical force to look after the health, life and welfare of the men on the battle field. This he did in a most remarkable manner. He had good material, but the organization was in his hands. He did it quietly, unostentatiously, and satisfactorily, as the results have shown.

At a meeting of the Association of Medical Officers of the Army and Navy, two years ago, that Association of survivors adopted a resolution to erect a monument to his memory in the city of Richmond, and among them are a number of representa-

tives of this Association, some of whom have been Presidents, and some of whom have become President since. I am about the only survivor here. We still have a few of the survivors left who cannot build that monument to Dr. Moore alone, hence we want to call the attention of the medical profession to help us to do so. Other monuments are being erected in Richmond, and the medical profession owes it to itself to commemorate the work of its predecessors in these eventful four years. A monument committee has been appointed with members in different states.

We want to get contributions from time to time to be sent to this committee from the doctors throughout Tennessee. Dr. Lewis, of Washington City, is at the head of the movement, and has done a good deal in recent years in providing markings for grave stones at Arlington Cemetery, and he is the man who has the work in hand. He will, from time to time, through the sub-committees of the different states memorialize the various state organizations.

I bring this matter before you now with the intention of bringing it up again next year and early at the session in Chattanooga. We cannot get subscriptions sufficient to build this monument in a day or in a month. I do not know how many years they were in erecting a monument to Benjamin Rush, but I believe it was some twenty odd years. The late Dr. Gihon hammered away at it, and there is a monument erected by the medical profession to Benjamin Rush at Washington, which is a credit to the medical profession. We want in the South a monument to Samuel P. Moore, and not only to him, but one that will be an honor to the medical staff of that army.

I present this matter to you briefly on this occasion. I would have brought it up earlier, but our time has been so crowded with work. I now leave the matter with you.

Dr. John A. Witterspoon: I feel that the sons of the South in the profession ought to take up this work, just as I believe the sons of the North ought to take up the work of commemorating their great sur-

geons, and if this matter is taken up in the proper way and committees appointed of more active and younger men to assist these elderly gentlemen, who not only fought our cause in the times when it tried men's souls, but made the pathway to medicine easier for us, great good would be done, and I, therefore, move that a committee of three, one from each grand division of the state, be appointed to assist this committee in an effort to raise money and try to make a report at the next meeting in Chattanooga.

Motion seconded and carried.

The President stated that he would announce the committee later.

There being no further business to come before the general meeting, on motion, the Association then adjourned to meet in Chattanooga in 1912.

MINUTES OF THE HOUSE OF DELEGATES.

FIRST SESSION.

Tuesday, April 11, 1911.

The House of Delegates was called to order at 2 p. m. by President Witherspoon.

As the minutes of last year were published in the May issue of the Journal of the Tennessee State Medical Association, page sixteen, on motion of Dr. Paul F. Eve, duly seconded, their reading was dispensed with.

The President asked the Secretary whether there was anything growing out of the minutes of last year on which action should be taken at this time.

The Secretary called attention to a motion made by Dr. Ellett last year, that each county medical society be communicated with for the purpose of getting the influence of commercial and business bodies to bear on our representatives in Congress in support of this bill (the Owen bill).

The Secretary stated that this matter had been looked after, and the bill was now pending.

The President said that no action by the House of Delegates with reference to this matter was necessary.

The next order was the annual report of the Secretary-Editor.

Secretary George H. Price, in presenting his report, said: I am sorry I cannot make a detailed report of those who have paid their dues up to this time, but in presenting my report I wish to say a word in connection with the work. I have been carrying on this work as best I could for several years. I am ready to surrender the position which I have filled by the grace of this body, the House of Delegates, and do so for this reason: The work which is incident to the office in running a journal from time to time, as we have projected it, is considerable, and I feel sure you can select some one better fitted for it than I am, and perhaps will make a greater success of this particular feature; consequently I place in the hands of the House of Delegates my resignation, or, at least, would suggest that you select some one else for the work.

SECRETARY'S REPORT.

To the Officers and Members of the Tennessee State Medical Association:

Mr. President and Gentlemen: Your Secretary desires to submit herewith his report for the year just closing.

There are at present sixty-two counties affiliating with the State Medical Association, only two counties having been added in the past year, namely, Grainger and McMinn. The total number of members represented by the county lists for the year is 1,492; of this number 1,317 have paid subscriptions or dues for the year. It seems a difficult matter for the county Secretaries to secure payment of dues and make prompt reports at the designated time, namely, by the 15th of March. In many instances the reports are not complete until the meeting of the Association and even then, there are quite a number of delinquents reported. It was hoped that dividing the State into Councilor Districts and publishing a map showing what counties are in each district and securing the aid of the Councilors to press the question of organization in unorganized counties would materially increase the membership and reach out with the organization into unoccupied territory. This hope has not been realized to the extent we had anticipated. The Councilors, I feel sure, in many districts, made an effort to overcome this condition and to extend the influence in their districts, but it seems to be a difficult matter to reach certain sections of the State, and I feel sure that it will become necessary to adopt some plan other than that we now have for accomplishing this purpose. What this plan

shall be is a question for this Association to decide and for the House of Delegates to formulate or outline the method and provide the means for carrying out the plan. In all probability, before the districts which are at present unorganized, can be successfully brought into the organization, it will be necessary for this Association to select a State organizer, whose duties will be to get into the unorganized section and by direct appeal and explanation of the advantages to be derived from organization, secure the co-operation of those who are now seemingly indifferent to appeals both from the State Secretary and the District Councilors.

This year, and especially the latter part of it, has been one of much interest and importance to the profession, in that the Legislature has been and still is in session, and before that body has been brought a number of bills affecting both directly and indirectly the interests of the profession as guardian of the public health. Your Committee on Public Policy and Legislation will doubtless have some important and interesting matters to bring to your attention. A bill looking to the codification and extension of the Medical Practice Act, which was introduced early in the session, has been practically killed. There are now pending the following bills:

The Model Vital Statistics Bill;

Amending the Food and Drugs Act;

Proposed Sanitary Hotel Bill;

Increase of Appropriation for the Food and Drug Department;

A Bill for Establishing a Hygienic Laboratory under the Direction of the State Board of Health;

A Bill for the Inspection of School Children.

Each one of which is important and should have the support from every man. It would be well for the members of the Association to see their representatives and request them to give these matters their earnest consideration and immediate support.

THE JOURNAL.

This organ of the Association has, as usual, been issued monthly. In it was published the papers and discussions, as well as the transactions of the last annual meeting held in Memphis, which have been mailed to the members of the Association and our exchanges regularly each month.

In the Journal have also appeared from time to time, articles from members, read before their respective County Societies. This source, it was hoped, would prove of greater advantage and benefit than has actually proven to be the case, since only a few of the county members have taken advantage of the opportunity to thus give to the Association the results of their observations in daily practice. It is hoped that in the future this lack of interest will be overcome and that ample fresh material may come into the hands of the editor to meet all the necessary demands.

The Journal has also been used for keeping be-

fore the profession, those important questions of legislation which are vital to the physicians individually and collectively, and in which it seems such a difficult matter to interest the profession.

The expense of publication and distribution of the Journal, which includes all the expenses incurred by the office of Secretary-Editor, such as typesetting, printing, binding, mailing, stationery for office, circular letters, cards, postage, telegrams, stationery for Councilors, salaries of Secretary-Editor, Assistant, stenographer, programs and badges.

GENERAL STATEMENT.

Balance on hand April 14, 1910.....	\$ 273.03
Received since April 14, 1910.....	1,657.82
Secretary-Editor's salary	500.00
	\$2,430.85

These funds are from the following sources:

Balance on hand April 14, 1910.....	\$ 273.03
From W. C. Bilbro, Treasurer	1,755.02
From advertisements	402.80

Total\$2,430.85

Disbursed:

Total expenses of office of Secretary-Edit.....	
or, including salaries and all general	
and incidental expenses as per report.	\$2,367.25

Balance due the Association\$ 63.60

ANALYSIS OF EXPENSE ACCOUNT.

Cost of Journal and all fixed and incidental charges	\$2,367.25
From this should be deducted the amount	
from advertisements	402.80
Cost of programs and badges	40.00
	\$ 442.80
Unpaid ads regarded as good	93.75
Unpaid ads questionable	50.00
	\$ 586.55
	\$1,780.70

Actual expenses of conducting the Journal for twelve monthly issues of 1,550 copies each	\$1,780.70
Average cost per month 1,550 copies.....	148.39
Average cost of copy per issue.....	.09
Average cost of year's subscription.....	1.14

In closing my report I wish to express to the House of Delegates and to the members of the Association my appreciation of the confidence reposed in me as expressed by the action of the House of Delegates in continuing me as Secretary-Editor for the past year. In this connection I desire to state that I believe it will be to the best interests of the Association to elect someone else to this responsible position for the coming year.

Yours very respectfully,

GEO. H. PRICE.

FINANCIAL REPORT OF SECRETARY.

RECEIVED

1910.	
April 11—Balance on hand in bank	\$ 273.03
April 14—From W. C. Bilbro, Tre., cash at Memphis	5.00
April 23—From F. A. Hardy & Co.	33.75
May 11—From F. A. Hardy & Co.	11.25
June 15—From W. C. Bilbro, Treas.	113.68
June 15—From Farbenfabriken of Elber- feld Co.	15.00
July 18—From W. C. Bilbro, Treas.	81.87
Aug. 12—From W. C. Bilbro, Treas.	88.46
Sept. 24—From W. C. Bilbro, Treas.	80.38
Oct. 1—From Farbenfabriken of Elber- feld Co.	15.00
Oct. 13—From S. T. Rucker	35.00
Oct. 13—From N. O. Polyclinic	7.00
Oct. 17—From W. C. Bilbro, Treas.	89.90
Nov. 22—From W. C. Bilbro, Treas.	105.53
Dec. 10—From W. C. Bilbro, Treas.	78.15
Dec. 27—From W. C. Bilbro, Treas.	100.00
1911.	
Jan. 2—From Farbenfabriken of Elber- feld Co.	15.00
Jan. 11—From W. C. Bilbro, Treas.	118.12
Feb. 6—From W. C. Bilbro, Treas.	86.74
Feb. 11—From W. C. Bilbro, Treas.	100.00
March 17—From American National Bank	10.00
March 19—From Petty & Wallace	35.00
March 20—From Oxford Retreat	40.80
March 21—From Katherine L. Storm	30.00
March 25—From F. A. Hardy & Co.	45.00
March 25—From W. C. Bilbro, Treas.	107.19
March 25—From W. C. Bilbro, Treas.	100.00
April 8—From American National Bank . .	40.00
April 10—From Theo Tafel Company	70.00
Secretary-Editor, Sept. 26, 1910	250.00
Secretary-Editor April 11, 1911	250.00
	\$2,430.85

DISBURSED

1910	
April 14—To telegram for association	\$.30
April 14—To express on secretary's box from Memphis	.65
April 18—To office postage	1.00
April 23—To stenographer, voucher No. 1 . .	7.50
April 30—To stenographer, voucher No. 2 . .	7.50
May 3—To Marshall & Bruce Co., voucher No. 3	6.25
May 7—To stenographer, voucher No. 4 . . .	7.50
May 14—To stenographer, voucher No. 5 . .	7.50
May 21—To stenographer, voucher No. 6 . .	7.50
May 28—To stenographer, voucher No. 7 . .	7.50
May 31—To Journal Postage, voucher No. 8	2.31
May 31—To office postage	1.00
June 2—To Gray Printing Co. (envel- opes) voucher No. 9	2.50
June 3—To posting extra journals, von- cher No. 9 (a)	.02
June 4—To stenographer, May 28-June 11, voucher No. 10	15.00
June 18—To stenographer, voucher No. 11 . .	7.50
June 20—To Marshall & Bruce, May Journal, voucher No. 12	113.68
June 22—To Marshall & Bruce, print- ing, voucher No. 13	3.50
June 23—To journal postage, voucher No. No. 14	2.14
June 25—To journal postage extra, voucher No. 14 (a)	.04
June 25—To stenographer, voucher No. 15 . .	7.50
June 28—To office postage	1.25
July 2—To Stenographer, voucher No. 16 . .	7.50
July 2—To journal postage extra voucher No. 16 (a)	.01
July 6—To postage circular letters, voucher No. 17	5.00
July 8—To McQuiddy Printing Co., voucher No. 18	1.00
July 9—To stenographer, voucher No. 19 . .	7.50
July 14—To journal postage, extra voucher No. 19 (a)	.10
July 16—To stenographer, voucher No. 20 . .	7.50
July 20—To Marshall & Bruce, June journal, voucher No. 21	81.87
July 22—To office postage, voucher No. 22 . .	2.00
July 27—To journal postage, voucher No. 23	2.41
July 30—To stenographer, July 16-30, voucher No. 24	15.00
Aug. 6—To stenographer, voucher No. 25 . .	7.50
Aug. 8—To journal postage extra voucher No. 25 (a)	.01
Aug. 11—To Gray Printing Co., (printing) ing) voucher No. 26	2.75
Aug. 13—To stenographer, voucher No. 27 . .	7.50
Aug. 16—To Marshall & Bruce, July journal, voucher No. 28	88.46
Aug. 27—To journal postage, voucher No. 29	2.14
Aug. 27—To stenographer, August 13-27, voucher No. 30	15.00
Sept. 1—To office postage, voucher No. 31 . .	2.00
Sept. 3—To stenographer, voucher No. 32 . .	7.50
Sept. 10—To stenographer, voucher No. 33 . .	7.50
Sept. 17—To stenographer, voucher No. 34 . .	7.50
Sept. 26—To journal postage, voucher No. 35	2.32
Sept. 27—To Marshal & Bruce, August journal, voucher No. 36	80.38
Oct. 1—To stenographer, Sept. 17-Oct. 1, voucher No. 37	15.00
Oct. 6—To journal postage, extra voucher No. 37 (a)	.02
Oct. 8—To O. N. Bryan, assistant, voucher No. 38	75.00
Oct. 8—To stenographer, voucher No. 39 . .	10.00
Oct. 14—To stenographer, voucher No. 40 . .	10.00

Oct. 18—To Marshall & Bruce, September Journal, voucher No. 41....	89.90	April 1—To stenographer, voucher No. 80	10.00
Oct. 22—To stenographer, voucher No. 42	10.00	April 7—To Marshall & Bruce, March Journal, voucher No. 81....	86.11
Oct. 29—To stenographer, voucher No. 43	10.00	April 8—To stenographer, voucher No. 82	10.00
Oct. 31—To Journal, postage, voucher No. 44	2.59	April 10—To McQuiddy Printing Company, voucher No. 83.....	1.25
Nov. 5—To stenographer, voucher No. 45	10.00	April 10—To Marshall & Bruce Co., April Journal, voucher No. 84....	117.27
Nov. 12—To stenographer, voucher No. 46	10.00	April 10—To Marshall & Bruce Co., program and badges, voucher No. 84	40.00
Nov. 19—To stenographer, voucher No. 47	10.00	April 10—To Dr. O. N. Bryan, assistant, voucher No. 85	75.00
Nov. 23—Marshall & Bruce, October Journal, voucher No. 48.....	105.53	April 11—To Journal postage, voucher No. 86	2.23
Nov. 26—To Journal postage, voucher No. 49	2.20	April 11—To Secretary-Editor	500.00
Nov. 26—To stenographer, voucher No. 50	10.00		\$2,367.25
Dec. 3—To stenographer, voucher No. 51	10.00	Total on hand and received by Secretary.....	\$2,430.85
Dec. 10—Marshall & Bruce, November Journal, voucher No. 52....	78.15	Total disbursed	2,367.25
Dec. 10—To stenographer, voucher No. 53	10.00		
Dec. 17—To stenographer, voucher No. 54	10.00	Balance due Association	\$ 63.60
Dec. 22—Journal postage, voucher No. 55	2.70	Respectfully submitted,	
Dec. 24—To stenographer, voucher No. 56	10.00	Geo. H. Price,	
Dec. 31—To stenographer, voucher No. 57	10.00	Secretary.	
1911.			
Jan. 7—To stenographer, voucher No. 58	10.00	It was moved and seconded that the report of the Secretary be received, referred to an Auditing Committee, and be published in the minutes. Carried.	
Jan. 14—To stenographer, voucher No. 59	10.00	The President said he would appoint the Auditing Committee later.	
Jan. 16—To Marshall & Bruce, December Journal, voucher No. 60....	118.12	The next order was the report of the Treasurer.	
Jan. 20—To office postage, voucher No. 61	2.00	The Treasurer, Dr. W. C. Bilbro, said that owing to the fact that all county medical societies had not paid up, he could only make a partial report, and asked for an extension of time.	
Jan. 21—To stenographer, voucher No. 62	10.00	On motion of Dr. Gillespie, the Treasurer was given further time.	
Jan. 27—To Journal postage, voucher No. 63	2.03	The President: The next order is a report from the Committee on Public Policy and Legislation, Dr. K. S. Howlett, Chairman.	
Feb. 4—To stenographer, Jan. 21-Feb. 4, voucher No. 64	20.00	Dr. Howlett: Your committee has no written report to make. I will state that we have never had a meeting really of that committee except in connection with a similar committee appointed by the State Public Health Officers' Association. It so happens that Dr. Hibbett and myself were members of both committees, and we passed a resolution at one meeting of that Association requesting the Legislative Committee	
Feb. 8—To Marshall & Bruce, January Journal, voucher No. 65....	86.74		
Feb. 10—To office postage, voucher No. 66	1.00		
Feb. 11—To stenographer, voucher No. 67	10.00		
Feb. 11—To office postage, voucher No. 68	1.00		
Feb. 16—To telegrams, Senators Taylor and Frazier, voucher No. 69..	3.58		
Feb. 18—To stenographer, voucher No. 70	10.00		
Feb. 18—To telegram, Washington	50		
Feb. 25—To registering charter	10		
Feb. 28—To Journal postage, voucher No. 71	1.98		
March 1—To Gray Printing Co., voucher No. 72	4.00		
March 4—To stenographer, Feb. 18-Mar. 4, voucher No. 73	20.00		
March 6—To office postage, voucher No. 74	2.00		
March 18—To stenographer, March 4-18, voucher No. 75	20.00		
March 21—To Journal postage, voucher No. 76	1.97		
March 25—To stenographer, voucher No. 77	10.00		
March 28—To Marshall & Bruce, February Journal, voucher No. 78	107.19		
March 29—To office postage, voucher No. 79	2.00		

from this body to act with us, and we had Dr. Witherspoon with us once and consulted with him on everything we have done. That committee has prepared and introduced a number of bills. One is a model vital statistics bill, prepared by Dr. Cochran, and that model vital statistics bill is about the same as has been adopted in the registration areas of the United States. This bill had the endorsement of both committees, the Legislative Committee of the State Health Officers' Association, as well as the Legislative Committee of this Association. That bill has been introduced into the House and Senate. Dr. Cochran requested a senator to introduce it into the Senate, and it was referred to the Committee on Ways and Means, of which John I. Cox was a member, and it carries with it an appropriation, and there is where it is now. We invited Dr. Wilbur of the United States Census Department to come to Nashville, which he did, and we secured a hearing before the general Senate Committee as well as before the Ways and Means Committee for Dr. Wilbur and Dr. Cochran.

Your committee would recommend that this Association as a body take some concerted action to have this bill passed upon. We consider that one of the most important bills that has been prepared. It means more to the public health of the state than any other, and we have got to have that bill go through to improve the public health matters in this state.

In addition to that we have prepared a bill under the direction of Dr. Hibbett, who was chairman of the sub-committee to establish a state hygienic laboratory under the control of the State Board of Health. That bill has been introduced into the House and Senate. In the House it has passed a second reading, and has been recommended for passage by the Senate Committee. That will have to go to the Ways and Means Committee, but so far it has not. That includes the only bills that have been agreed upon by this committee.

In addition to that we have endorsed a medical inspection bill, prepared by Dr. Hill, and endorsed by the Senate Committee. He had the bill prepared by our friends, the

commercial travelers. I believe these are the only bills we have agreed on and recommended for passage, except the bill to reorganize the county Boards of Health, which this Association as a body is not especially interested in, but we would be glad to have the Association endorse it, if it sees fit to do so.

Before I sit down, I would like to say in connection with this work we want to express our appreciation of the effort and help we have had from Dr. Brown, Chairman of the Sanitary Committee, and Dr. Link, Chairman of the Sanitary Committee in the House. They have given us all the assistance possible. We feel under special obligations to the Secretary of the State Board of Health for the help he has given us, for the manner in which he has gotten the matter before the public through the public press, and we feel that has been of great assistance to us.

The President: I would suggest that the Secretary of this Association be requested to transmit a message to Senator Brown and Representative Link, thanking them for their assistance in this work, and also that we thank Dr. Albright in person. These things help a great deal. They are simply common courtesies, and these men deserve a vote of thanks, and we should so express ourselves.

It was then moved that the remarks of President Witherspoon be incorporated in the form of a motion, and that the Secretary be instructed to send the thanks of the Association to the gentlemen named.

Motion seconded and carried.

Dr. Olin West: I would like to be heard in this connection with reference to the activities of this committee and the activities of other organizations in our Legislature at the present time. We feel, those of us who are actively interested in the promotion of public health, that this Legislative Committee as a body and as individuals are entitled to the thanks and encouragement in whatever way it is possible to render it by the State Medical Society. They have fought under the highest odds, and it is not apparent yet whether or not it will be a losing fight or not. The State Board of

Health and its Secretary and executive officer are committed to certain of these bills which you have heard discussed by the Chairman of the Legislative Committee. Numerous organizations, county, local and state have endorsed these measures, and many of the men have been active in trying to promulgate their passage through the Legislature. We are meeting just at this particular time the most intense opposition from a force of organized lobbyists who are not limiting their efforts to the Tennessee Legislature. This body is none other than that which was referred to in a resolution which was introduced this morning in the open meeting by Dr. Crockett, and I believe it is known as the American League of Medical Freedom, which is backed by the patent medicine trusts and lobbyists, composed partly of Christian Scientist agitators. They are getting in their work in our Legislature, having come here directly from the State Legislature of North Carolina, where they have opposed every measure introduced for the good of the public health, or every measure which touched medicine at any angle. They are at this moment engaged in active work in the Arkansas Legislature. They have been in Tennessee for more than two weeks, and I understand they have just succeeded in defeating every measure that touches the medical profession in North Dakota. It seems to me, and it does to many others who are interested in these measures, who know about the activities of these lobbyists, that it behooves this body as the Medical Society of Tennessee to take some action which will enable us to overcome this opposition that is being offered to the passage of these bills which vitally affect the health of the people of Tennessee. They are directing their efforts more specifically towards the bill for the medical inspection of school children, but I am informed in a letter which I received from a Washington doctor that they have opposed every measure, even appropriations for state boards of health, in all Legislatures before which they have appeared. Dr. A. B. Cooke perhaps is more familiar with the history of this organization than any other man, and I would like to see some

action taken by this house which will lead to some action on the part of the State Medical Society as a body that will tend to overcome opposition to these measures that we have at present in the Tennessee Legislature. The State Board of Health is devoting much of its time and energy and its funds to a campaign for the education of the people in matters pertaining to public health. There can be no doubt but that a wave of great interest is sweeping over the country in reference to these matters, and if there ever was a time on earth when we ought to be in a position to do something for the public health, to-day is that time, and I sincerely hope, Mr. President, that this House of Delegates will take some action which will lead to some decided action before our State Legislature now in session in this city.

The President: I would like to make one remark along the line suggested by Dr. West. I would like to say that if there is anybody here who has definite information on the subject of this body or league they will please hand it to me this afternoon, because I am going to handle that question to-night in my address.

Dr. A. B. Cooke: There is only one phase of this matter that I desire to call your attention to, and that is the personnel of this body known as the National League of Medical Freedom. It seems that this body came into existence last June, when it showed itself in a hearing before the Congressional Committee at Washington in reference to the consideration of various bills which had to do with the creation or establishment of a department of public health. The President, I understand, of this league is B. O. Flower, formerly the editor of the *Arena Magazine*, and later of some magazine of New Thought. Its executive committee is composed probably of seventy-five members. Dr. West has a pamphlet setting forth the hearing before the Congressional Committee at Washington, and the stenographic report is absolutely authentic, and in one of these pamphlets the personnel of the executive committee is published. One of the members of this committee is the President of the National Drug Syndicate. An-

other is the President of the Anti-vivisection Society, or the National Anti-vivisection Society. Another one is the Secretary of the Christian Science Organization in Pennsylvania or in New York, and so the personnel of the executive committee runs all the way through. They have been able to enlist with them a number of apparently strong men who have been misled as to the purposes of the organization. That organization met and fought for about a week before this Congressional Committee in the hearing on the Mann bill and Owen bill for the creation of a National Department of Health, and whether their work was effective or not we cannot tell. We know there was no action taken on these bills, and they were not recommended in any sense for passage. In the course of some remarks they were asked questions by different speakers as to what their organization was for and what they represented. They said that their organization was for the purpose of protecting the health of the people of the country from medical trusts and from the American Medical Association, which was a great medical trust in their opinion, and it was this that they were fighting. It was their purpose to fight all propositions which came up before the various State Legislatures. They appeared on the scene here in Nashville about two weeks ago. They have issued a pamphlet which is skillfully written, with some literary ability and merit, by this O. B. Flower, who is their President, on the compulsory medical inspection of school children, in which they take the ground that the purpose of the doctors in furthering this bill is to get an opportunity to study anatomy, experimental anatomy, on the helpless school children. This pamphlet was distributed and put into the hands of every member of the present Legislature, both in the Senate and House, and an emissary for the distribution of the magazine was a former medical practitioner in this county, who fell from grace, later embraced Christian Science, and is now an emissary of the organization. One of the men who appeared was the Secretary from Toledo, Ohio. He began a tirade against physicians in general and was invited out of the

office of the *Banner* by the editor of that paper, who knew the medical men of Tennessee very well. I have not been officially connected with legislative work this year, but I have been so riled or amazed by this assault made on us as a profession that I find it difficult to retain my composure and keep quiet in an emergency, and I do think that anything we can do to offset these things ought to be done. It is perfectly right for us to demand a hearing before the committees of the Senate and House.

We represent 3,500 or 4,000 voters in the State, and we know most about the hygienic needs of the various localities in our State, and we ought to use plain language as to what we want. It is the only way we will get anything.

There is another organization here this week, and that is the Middle Tennessee Educational Association, a public school association and they will probably have three or four hundred delegates from every county in the State. There should be a committee appointed by this House of Delegates to wait on this body and talk to them with reference to the medical inspection of school children and obtain their good offices in the furtherance of this and other measures.

DR. O. DULANEY: We had the pleasure of having the West Tennessee Teacher's Institute meet with us, and I brought the matter before them of the medical inspection of school children, which was endorsed by over four hundred teachers. I explained it to them in the simplest way I could possibly do. We also had a splendid program prepared for these teachers, and at one of these meetings the teachers were very much interested in the sanitary laws of this state and they are ready to co-operate with us, I am sure, and I do not think we will have any trouble. I am especially interested along this line, and have prepared a paper to be read before our association on the subject of inspection of school children and other matters which might be improved. I think I have taken up the matter in a practical way as to how this examination should be made, and by co-operating with the school teachers I think it will be the most favorable and practical way to meet the needs of the people. Be-

fore we can get these people enlisted with us in our work, we must tell them what we propose to do, and then we will have no trouble, because they come in contact with every man, woman and child in West Tennessee, and we must have their support and influence, and then I believe we can pass any such laws as are necessary for the protection of our people.

DR. S. R. MILLER: I move that the President appoint a committee of three, consisting of Drs. Cooke, West and Howlett, to present resolutions and recommendations to this body of teachers tomorrow along the line that has been suggested. It has been suggested that this matter might well come from our county societies to the members of the House and Senate, and that this committee, after hearing the President's address tonight, shall make such recommendations to this body of teachers as they see fit.

Motion seconded and carried.

DR. G. B. GILLESPIE: I move that Dr. Dulaney's paper be made a special order for this evening before the delivery of the President's address.

Motion seconded and carried.

DR. W. M. MCCABE: I move that a committee be appointed from this House of Delegates to request the Chairmen of the committees to whom these bills have been referred, and also the Chairmen of the Senate and Speaker of the House, that those bills be given a hearing in the presence of this entire organization tomorrow just after the adjournment of the House and Senate.

DR. COOKE: I wish to second that motion. I think the proper plan, and the most effective plan, would be to appoint a committee of say five or seven from this House of Delegates, and instruct the committee to wait upon the Speaker of the House and the Speaker of the Senate, and the Chairmen of the various committees who have charge of these bills now pending in the Legislature, and officially represent this organization in a request for a hearing during the session of this Association; then the committee can report back to this body. Better still, it would be well for the entire state association to go up there and show them that we mean business.

Motion put and carried.

The President appointed on this committee Drs. W. M. McCabe, A. B. Cooke, K. S. Howlett, Duncan Eve, G. B. Gillespie, S. R. Miller and B. F. Fyke.

On motion, the House took a recess of five minutes in order to allow the delegates from the three grand divisions of the state to select members of the nominating committee.

On reconvening the Secretary announced the following as the Committee on Nomination: West Tennessee, Drs. G. B. Gillespie, William T. Black, O. Dulaney; Middle Tennessee, Drs. G. C. Savage, K. S. Howlett and A. F. Richards; East Tennessee, Drs. S. W. Woodyard, O. W. Hill and E. T. Newell.

On motion, the House of Delegates adjourned until 8:30 a. m., Wednesday.

SECOND SESSION.

Wednesday, April 12, 1911.

The House of Delegates met at 8:30 a. m., and was called to order by Dr. G. B. Gillespie, who acted as Chairman in the temporary absence of President Witherspoon.

The Secretary called the roll.

THE SECRETARY: Another matter which comes from the American Medical Association is with reference to the medical defense by state medical societies. This question was called to my attention by some pamphlets sent with information concerning the matter, with the request that the Tennessee State Medical Association take the matter into consideration. As we in Tennessee know very little of this particular matter, I think it would be well to have it referred to a committee for investigation and report back to the association.

DR. SAVAGE: This is a matter which should not be taken up by state societies, but left to the companies that are organized and chartered for the purposes for which that seems to stand.

DR. S. R. MILLER: I think it is proper to take some action in order to show the American Medical Association that we are willing to consider such matters. I move that this be referred to the county medical

societies to be reported on at our next annual meeting.

Motion seconded and carried.

DR. GEORGE E. PETTEY, Memphis, presented the following resolutions:.

Be It Resolved, By the House of Delegates of the Tennessee State Medical Association, that the Trustees of the Journal and the officers of this association be and they are hereby instructed to discontinue the publication of the Journal of the Tennessee State Medical Association as a monthly medical journal, and that they hereby publish the proceedings of this House of Delegates and the transactions of the scientific sessions of this association, together with such other matter as is pertinent thereto in the form of a bound volume annually.

Resolved, Second, that said bound volume of transactions be issued and published as soon after the adjournment of each annual session of the association as is practicable, and that a copy of the same be sent (prepaid) to every member of the association.

Resolved, Third, that a sufficient number of such bound volumes of transactions be published each year to supply a copy to each member of the association, and a copy to each of the public librarians within the state, and to furnish copies for exchange with other state associations, together with a reasonable number for the files of the secretary's office.

(Signed) GEORGE E. PETTEY,
WILLIAM T. BLACK,
J. HUGH CARTER,

Delegates from Shelby County.

To bring the matter before the House of Delegates, Dr. Pettey moved the adoption of the resolutions.

Seconded.

Dr. Crook moved that these resolutions be made a special order for 2 o'clock.

Motion seconded and carried.

On motion, the House of Delegates adjourned until 2 p. m.

THIRD SESSION.

The House of Delegates reassembled at 2 p. m., and was called to order by the President.

The special order of business for the hour, namely, resolutions to discontinue the Journal, was called, but as there was not a large attendance, it was moved to postpone consideration of it.

Motion seconded and carried.

The President appointed the following Auditing Committee: Drs. K. S. Howlett, Duncan Eve., Sr., and T. H. Marable, to audit the accounts of the Treasurer and Secretary.

Dr. Roberts called attention to the fact that a committee had been appointed to report at the last meeting on the subject of securing legislation looking to state sanatoria for tuberculous patients, but he was detained at home and could not be at the last meeting, and the matter failed to come before the House.

Dr. Eve moved that this committee, composed of Dr. D. J. Roberts, Chairman; Dr. John A. Witherspoon, and Dr. Louis LeRoy, be continued to report at the next meeting, April, 1912.

Motion seconded and carried.

Quite a number of delegates having come in, the consideration of the special order, that is, the resolutions concerning the Journal, was again called.

SECRETARY PRICE: The Journal has been issued regularly each month. The Journal has printed the transactions of the State Medical Association and has, from time to time, printed papers furnished by county medical societies. It has been with great difficulty that your Secretary could secure from county societies the support and interest in the Journal which it was thought that the Journal would engender. The idea in establishing the Journal was to make it a medium of exchange and interchange of opinions among the members of county societies and the means of giving to each section of the state the ideas gathered from practical experience of everyday life by physicians in various sections. I have on numerous occasions sent out special communications to individuals and to county societies asking for contributions, but only a few have responded. One of the functions of the Journal was for the purpose of stirring up interest in county organizations, but that

particular feature has not been of as much value to us as we had hoped. I believe you can make the Journal an instrument for good in Tennessee, and I trust you will elect some one to the position of Secretary-editor at this meeting who will meet all the requirements of such a position. I have spent five or six years in an earnest effort to make the office of Secretary responsible to the profession generally. That I believe in a measure has been accomplished. It has not altogether. Any man who has served in any capacity as a local or county Secretary has the same experience. When he goes after a man too strongly, he holds off, and the man who holds off always has a complaint. With these facts before you, you can take such action as you see fit.

DR. BILBRO made the point that the Journal existed by reason of constitutional authority, and its publication would have to continue another twelve months in order to carry out the spirit of the Constitution.

The Secretary stated that the Journal could not be discontinued until at the end of twelve months; that to do otherwise would be unconstitutional.

After further discussion by Drs. Carter, Cooke, Howlett, Marable, Price, Bosworth, Savage, Eve, Richards, the President ruled that the Journal was established in accordance with the Constitution of the Tennessee State Medical Association, and that the only way it could possibly be stopped is for the gentleman who presented the resolutions to file a notice of an amendment to the Constitution stopping the Journal at the end of a year.

The Chair did not see how it was possible to rule otherwise, if the Journal was established that way and the law distinctly so states.

Dr. Pettay appealed from the decision of the Chair.

A vote on the question of appeal showed eighteen in favor of sustaining the chair in his ruling, and thirteen against. The Chair was sustained.

On motion, the House of Delegates adjourned until 8:30 a. m. Thursday.

FOURTH SESSION.

Thursday, April 13, 1911.

The House of Delegates met at 8:30 a. m., and was called to order by Dr. Gillespie, in the temporary absence of President Witherspoon.

The Treasurer, Dr. W. C. Bilbro, presented his annual report, as follows:

To the Officers and Members of the Tennessee State Medical Association:

Your Treasurer begs leave to make the following report:

Cash in hands of Treasurer April 15, 1910, \$1,897.68

Cash received from Counties for 1910:

1910

April 16—Robertson	\$ 6.00
April 16—Macon	6.00
April 16—Smith	2.00
April 16—Loudon	2.00
April 16—Henry	12.00
April 12—Henry	2.00
April 16—Hamilton	8.00
April 16—Weakley	2.00
April 16—Marshall	32.00
May 4—Greene	10.00
May 4—Monroe	2.00
June 2—Davidson	34.00
June 14—Hamilton	4.00
June 27—Montgomery	4.00
July 13—Overton	2.00
July 17—Overton	4.00
July 19—Carroll	2.00
July 11—Shelby	30.00
July 14—Shelby	2.00
July 14—Knox	8.00
July 21—Loudon	2.00
August 13—Hamilton	6.00
August 8—Robertson	2.00
December 28—Hamilton	6.00
September 10—White County	4.00
September 26—Grainger	14.00

1911

January 2—Davidson	28.00
February 31—Hardeman	18.00
February 17—Shelby	26.00
February 8—McMinn	34.00
February 15—Smith	24.00
Rhea	28.00
Macon	6.00
Loudon	14.00
Henderson	24.00
McNairy	22.00
Bradley	26.00
Anderson	22.00
White	34.00
Greene	46.00
Montgomery	32.00

Hardeman (P. O., Whiteville)	2.00
Scott	12.00
Sumner	20.00
Haywood	22.00
Humphreys	14.00
Manry	44.00
Polk	18.00
Grainger	6.00
Jackson	10.00
Grainger	2.00
Smith	2.00
Giles	48.00
Bedford	40.00
Overton	18.00
Robertson	32.00
Gibson	44.00
Hickman	16.00
Lake	20.00
Shelby	304.00
Tipton	30.00
Knox	114.00
Sumner	2.00
Wilson	24.00
Hamblen	30.00
Hamilton	98.00
Campbell	24.00
Crockett	24.00
Lincoln	44.00
Henderson	4.00
Monroe	18.00
Obion	40.00
Warren	22.00
Shelby	8.00
Dickson	14.00
Rutherford	26.00
Davidson	222.00
Gibson	2.00
Fayette	10.00
Hickman	2.00
Madison	54.00
Obion	2.00
Washington	40.00
Dyer	40.00
Hamilton	28.00
Obion	2.00
Knox	10.00
Williamson	20.00
Marshall	32.00
Fayette	4.00
Shelby	2.00
Roane	26.00
Carroll	8.00
London	4.00
Robertson	6.00
Robertson	2.00

Total received\$2,304.00

Amount disbursed since last meeting:

1910

April 14—Cash to Dr. Price\$ 5.00

May 2—Expenses to Nashville 2.00

May 4—Expenses to Nashville	2.00
June 14—George H. Price, May Journal..	113.68
May 9—Wm. Whitford	115.50
May 20—Expenses to Nashville	2.00
June 11—Expenses to Nashville	2.00
July 2—Bosworth	50.00
July 2—Crockett	50.00
July 19—G. H. Price, June Journal	\$1.87
Aug. 11—G. H. Price, July Journal	88.46
Sept. 20—G. H. Price, August Journal..	80.38
Sept. 26—G. H. Price, salary	250.00
Oct. 14—G. H. Price, September Journal..	89.90
Nov. 21—G. H. Price, October Journal ...	105.53
Dec. 7—G. H. Price, November Journal..	78.15
Dec. 7—Dr. Howlett, expenses	8.25
Dec. 24—Dr. Price, expenses	100.00
1911	
Jan. 10—G. H. Price, December Journal..	118.12
Feb. 6—G. H. Price, January Journal...	86.74
Feb. 10—G. H. Price, expenses	100.00
March 24—G. H. Price, February Journal	107.19
March 24—G. H. Price, expenses	100.00
April 10—Postage	5.00
April 10—Premium on bond	20.00
April 11—Geo. H. Price, Secretary-Editor	250.00

Total disbursed\$2,041.77

GENERAL STATEMENT OF TREASURER.

Balance in hands of Treasurer April 15,

1910\$1,897.68

Amount received April, 1910, to April,

1911 2,304.00

Total received\$4,201.68

Total disbursed 2,041.77

Balance in hands of Treasurer\$2,159.91

Balance in hands of Secretary 63.60

Total balance\$2,223.51

DR. E. T. NEWELL presented the report of the Nominating Committee, and the following officers were balloted for and declared duly elected: President, Dr. C. J. Broyles, Johnson City; Vice-President from East Tennessee, Dr. James H. Atlee, Chattanooga; Vice-President from West Tennessee, Dr. J. D. Brewer, Newbern; Vice-President from Middle Tennessee, Dr. J. W. Breeding, Ravenscroft; Secretary-Editor, Dr. Perry Bromberg, Nashville; for trustee of the Journal, Dr. B. D. Bosworth, Knoxville.

Councilors: S. R. Miller, Second District, 1912 to 1913; Walter Dotson, Fourth District, 1912 to 1913; George H. Price, Sixth District, 1912 to 1913; J. T. Herron, Eighth

District, 1912 to 1913; G. B. Gillespie, Tenth District, 1912 to 1913.

Delegates to American Medical Association: Jere L. Crook, Jackson, two years; alternates, O. Dulaney, Dyersburg, two years; A. B. Cooke, Nashville, two years, to fill unexpired term of S. S. Crockett.

Place of meeting, Chattanooga; time, April, 1912.

Dr. George E. Pettey proposed the following amendments to the Constitution and By-laws:

Article VIII—Strike out of Section 1, 2 and 3 all reference to Trustees of the Journal, and rewrite Article to read as follows:

OFFICERS.

Section 1. The officers of this association shall be a President, three Vice-Presidents, a Secretary, a Treasurer and ten Councilors, one of the Councilors shall be from each Congressional District of the State.

Section 2. All the officers shall be elected annually, except Councilors.

The term of office shall be two years. At each annual session five Councilors shall be elected to serve for two years.

The President and Secretary shall be members of the Council, ex-officio, and any five Councilors shall constitute a quorum.

Section 3. All the officers of this association shall be elected by the House of Delegates on the morning of the last day of the annual session, but no delegate shall be eligible to office except that of councilor, and no person shall be elected to any office who is not in attendance at the annual session. No one shall be eligible for President of this association who has not been a member in good standing for the five years next preceding the election, nor for Vice-President who has not been a member in good standing for the three years next preceding.

ARTICLE IX. BOARD OF TRUSTEES.

Strike out entire Article and renumber other articles, making Articles X, XI, XII take numbers of IX, X, XI.

BY-LAWS.

CHAPTER VI.—DUTIES OF OFFICERS.

Section 3. Strike out in third paragraph the words "as provided for in Chapter IX, as defined and set forth in the duties of the Board of Trustees," and insert in lieu thereof the following: On a written order from the President, countersigned by the Secretary.

Section 4. Strike out the words, "He shall be the editor of the Journal of the Association, and he shall discharge such duties as the Trustees shall direct," and insert in lieu thereof: "He shall publish the proceedings of the House of Delegates and of the Scientific Session of this association, together with such other matter as is pertinent thereto, in the form of a bound volume. He shall publish said bound volume of transactions as soon after the adjournment of each annual session of the association as is practicable, and shall send a copy, prepaid, to every member of the association and to each of the public libraries within the State, and shall discharge such other duties as the House of Delegates may direct.

CHAPTER IX.

Section 1. Strike out of first paragraph the following words: "And subscription to the Journal of this Association."

After presenting these amendments, Dr. Pettey moved that they lie over, and that the Secretary be instructed to give notice to the Secretaries of county medical societies as required for Constitutional amendments.

Motion seconded by Dr. Savage and carried.

DR. SAVAGE: I move that the House of Delegates instruct the editor and Board of Trustees to have a sufficient number of reprints run off, folded and filed away, to be brought together and bound in a volume at the end of the year, and be sent by freight to the Secretaries of the county societies, the number to be in harmony with the membership of these societies.

Motion seconded and carried.

Dr. Howlett presented the following reports of the Auditing Committee.

We have examined the vouchers of Dr.

Price, Secretary and Editor, and find his report as submitted to the House of Delegates correct.

(Signed.) K. S. HOWLETT,
DUNCAN EVE,
W. M. MCCABE.

We have examined the vouchers of Dr. Bilbro, Treasurer, and find he has on hand on April 13, 1911, \$1,897.68; \$2,304 collected to April 12, 1911; total, \$4,201.68. Expended as per vouchers, \$2,041.77. Balance on hand April 12, 1911, \$2,159.91.

Respectfully submitted, K. S. Howlett,
Duncan Eve, W. M. McCabe.

On motion of Dr. Glenn, the reports were adopted.

Dr. A. F. Richards, Chairman of the Committee on Memoirs, presented the following reports::

REPORT OF THE COMMITTEE ON MEMOIRS.

Dr. Hubert P. Doak was born in Green County, Tennessee, on the 29th of February, 1864, and had resided in the community in which he was born all his life. He received his literary education at Tusculum College and taught school for several years. At an early age he joined the Presbyterian Church, and for ten years had been an elder in his church. He died of Pneumonia, Sunday morning, February 5, 1911.

Dr. Doak was graduated from the University of Nashville with the class of 1893. He served four years as Health Officer for Green County, and had been a member of the Board of Pension Examining Surgeons at Greenville for ten years. He discharged every duty of life faithfully; a dutiful son, affectionate brother, devoted husband, indulgent parent, loyal friend, kind neighbor, a conscientious, painstaking physician.

At a meeting of the Green County Medical Society, February 6, 1911, the following resolutions were adopted:

Whereas, The Great Physician has called our brother member and ex-President, Dr. Hubert P. Doak, it is with a feeling of regret and profound sorrow that we recognize and submit to the inevitable in his death; therefore, be it

Resolved, First, that in his life we appreciate the attainments of the highest qualities that should pertain to a physician in the true and full sense of the term; that we recognize his high mental capacity, his modest demeanor, his sterling integrity, his unswerving attitude for the good and true, his indomitable energy and far-reaching Christian character combined with an exalted ideal of the broad views of his mission as an agent of the Creator and preserver of mankind.

Resolved, Second, that in his death the Green County Medical Society has lost a true, good friend and fellow; the medical profession a conservative, capable member; the community a valuable citizen, and the world an honest man.

Resolved, Further, that these resolutions be spread on the minutes of the society, and that copies be sent to the county papers and to members of the family.

Respectfully submitted, S. W. Woodyard,
W. H. Hawkins and W. B. Taylor, Committee.

Dr. G. T. Russell, of Athens, Tenn., after a long illness succumbed to the Great Reaper on September 11, 1910, at the age of 63 years and 10 months. Dr. Russell was a native of McMinn County, and was one of nine children born to Rev. and Mrs. J. S. Russell. He was a member of the Baptist Church. He graduated at Jefferson Medical College, in Philadelphia, March 20, 1870. He was in active practice in Athens until the past two or three years, when his health began to fail. For twenty years he was local surgeon for the Southern Railway at that place.

The following have died during 1910: Dr. G. O. Bicknell, Etowah, graduated from the University of Nashville in 1893; licensed in 1894. Dr. A. Slack, Coghill, years of practice, licensed June 4, 1907. Dr. E. S. Miller, Johnson City, died April 12, 1911. Dr. W. E. Wilson, Pulaski, died July 27, 1910.

(Signed) A. F. RICHARDS., Chairman.

As there was no further business to come before the meeting, on motion, the House of Delegates adjourned *sine die*.

THE JOURNAL

OF THE

TENNESSEE STATE MEDICAL ASSOCIATION

Devoted to the Interests of the Medical Profession of Tennessee.

Office of Publication, Jackson Building, Nashville, Tenn.

This Association does not officially endorse the opinions presented in the different papers published herein.

(Entered as second-class matter May 39, 1908, at the postoffice at Nashville Tenn.)

MAY, 1911.

EDITORIALS

IN assuming the duties of Secretary-Editor of the Tennessee State Medical Association, I cannot help but feel my unfitness for so responsible a position. However the die is cast and I am now your servant. I shall serve the interests which I represent to the full limit of my capacity and shall make any reasonable sacrifice demanded of me to make your Journal a success.

Your Journal has been ordered continued by the House of Delegates and I feel that it can be made a most valuable asset to the Association and the profession at large in the state, if it can succeed in organizing the profession and securing from them the active support which it deserves and demands. I trust that each and every county secretary will feel the responsibility of his position as I feel the responsibility of mine and that they will determine to arouse interest and enthusiasm in their local communities, and work diligently towards that end. There is much to be done. Tennessee ranks very low in her sanitary regulations. The profession is not organized and fighting together as they should be and I ask the aid and assistance of the members throughout the state to help the Journal better these conditions.

The campaign that is being conducted by the State Board of Health for the eradication of hookworm disease is progressing in a way that presages ultimate success. Five men are in the field all the time looking for cases of hookworm disease, telling the people about the sanitary arrangements that will help to prevent hookworm disease and typhoid fever, making microscopic examinations for the physicians and people, and referring all cases of hookworm disease found

to the local doctors for treatment. More than a thousand microscopic diagnoses of hookworm disease have been made by these five men in the field, an unknown number of microscopic diagnoses have been made by individual physicians, and many cases have been proven by experimental treatment after a clinical diagnosis. The physicians are responding more generally to the appeals of the State Board of Health for their co-operation in this work, though they are not as active in their support as are the physicians of neighboring states. In North Carolina more than 18,000 cases have been reported as treated by the physicians, these reports having been made to the State Board of Health. Nearly 1,200 physicians are reporting hookworm disease to the Board. In Alabama and Georgia hundreds of physicians are reporting hookworm disease and cases treated to their State Boards. Dispensaries for the treatment of hookworm disease have been established in Alabama and Mississippi and thousands of cases have been treated in them. The local physicians are co-operating in the work being done in these dispensaries and the citizens and county courts are paying the costs.

The State Board of Health of Tennessee is unable to give any definite figures as to the number of cases treated, because the physicians generally do not report. While we have no Hygienic Laboratory, microscopic examination of fecal specimens for the diagnosis of hookworm disease will be made for any doctor free of cost. A letter or card to the State Board of Health will bring mailing cases to any physician and he can send the specimen to be examined in one of these cases. The findings will be reported as soon as possible. More than two hundred of these cases have been sent out to physicians requesting them within the last two months.

Many obscure cases have been cleared up by the examinations of fecal specimens sent to the Board of Health. In many cases where hookworm infection was suspected the trouble has been found to be due to other intestinal parasites whose ova were found. The results that have come from treatment of some of these cases have been equal

to the remarkable benefits that have been obtained by treating marked cases of hookworm disease.

Some of the cures that have been obtained by the treatment of hookworm patients have been as remarkable as any that have ever been secured from "606," antitoxin, or any other curative agent.

This work is worthy of the support of every physician, and it is rather remarkable that there are those in the profession of Tennessee that, without any experience in the treatment of hookworm disease, refuse to help in the work of its eradication. They say they "do not believe in it." None of them have been found, however, who are willing to prove their claims or allow them to be disproved by submitting to a test upon their own persons.

The Biennial report of the retiring Superintendent of Public Instruction, Prof. R. L. Jones, contains much that is of interest to all who are interested in the question of public health. It is in the schools that the education of the people in all that pertains to public health and preventive medicine must be attained, and the careful study of conditions in the common schools is necessary in order that the efforts of our public health organizations may be wisely directed.

The report of the activities of the Department of Education shows that the enrollment in the first year in the public schools of the state in 1910 was 152,148, while the second year's enrollment was 82,340, more than 46 per cent. of the children going out between the first and second years, coming down to the fifth grade, we find that the enrollment in 1910 was 60,355 and the sixth grade contained only 30,048, a loss of more than 50 per cent. occurring between these grades. This is indeed a startling revelation. No figures are given to show how many of the children in the sixth grade were "repeaters," but it is fair to assume that quite a number of them had already had at least one year in the sixth grade, and the real loss is greater than is apparent.

A further examination of the table show-

ing the enrollment in the schools discloses the fact that while our public schools have 152,148 children in the first year's class only 188 are left to enter the fourth year of the high school.

These statements give food for thought. What is responsible for this condition of affairs? Of course, there are many factors which operate to gradually reduce the enrollment as we approach the later years of the public school course, but there are two forces at work which should have the attention of every citizen and which demand most careful consideration with a view of overcoming them. They are: (1) disease, for the most part preventable, and physical defects, for the most part removable; (2) child labor.

Read again the figures of enrollment in the fifth and sixth grades, 60,355 in the fifth, 30,048 in the sixth, and then ponder whether or not medical inspection of school children and an efficient bureau of vital statistics would avail anything in Tennessee.

It is found from the report of the State Board of Health that twenty children were sent home from the Blind School of the state of Tennessee last year with normal vision. Think of it! Twenty children so nearly blind that they were actually sent to the Blind School, returned to their homes with *normal vision* by reason of the fact that there they had an opportunity to be examined by an efficient oculist who applied the simple means of restoring their sight. All that was needed was to correct the defects of vision from which they suffered by fitting glasses. If there were twenty in the state who were so nearly blind that they were sent to an asylum for the blind, how many may there be in our schools with defects sufficiently marked to hinder their progress as students, produce and aggravate nervous unbalance, and generally retard their mental and physical advancement and growth? It is time for medical inspection of school children to be had in all the schools of our state as well as in the more favored cities.

The disrupted condition of our bi-state legislature has made the passage of the pro-

posed measures for medical inspection of school children, immediate registration of births and deaths, and the hygienic laboratory impossible. The active campaign that was conducted by the State Medical Society, the State Board of Health, and some of our teachers and a few private citizens who are sincerely interested in all that pertains to the public health, has done a great deal toward creating a sentiment that will insure the successful passage of these measures next time. A part of the press of the state has been actively supporting the bills that were introduced and have done a great work in spreading information about the conditions that demand these things that are needed for the eradication of disease of preventable nature.

INTERMINGLING with other medical men is the best post-graduate course you can take. Listen to this from Hamilton County: "One hundred and eighteen subjects on the 1910 program, embracing almost every known medical and surgical topic. A veritable twelve months of general post-graduate work. Many interesting cases have been reported and exhibited, all have been appreciated and conducive to valuable discussions."

Can't your county do one-half or one-third as well? If so, won't it be worth the effort?

SECRETARIES, yours is the most important position in your local organization. You are the one to arouse enthusiasm and keep it up. Are you doing your duty? Or are you simply drifting with the others? Wake up, and make your county the live, hustling, enthusiastic organization which it should be. Remember the United States Postal Law will not permit us to send the Journal to unpaid members. Get busy and collect from all, for we are anxious that the Journal shall reach every doctor in the state.

Of the 96 counties in Tennessee, we have 61 counties organized. Many of these counties doing scarcely nothing, having practically no meetings and taking no interest whatever in matters which as profes-

sional men should arouse them to activity. Come, brother! Can't you get together and organize your county? Call on your counselor for advice. He will gladly give you all the assistance needed.

SIMPLY because there are only six or eight physicians in your county is no reason why you should not be organized. Get together and invite members from adjoining counties to meet with you and you should in return visit the adjoining county societies. Above all, make arrangements to visit the state meeting in Chattanooga next April.

THE Journal will in the near future publish in detail the counties which are doing good work and those that are delinquent both in work and cash. Get busy, doctor, and save your county this stigma.

The Biennial report of the State Board of Health is just off the press. This report can be secured upon request by any physician in the state. Read it and help make the next one better.

DEATHS

JAMES BALAAM STEPHENS, M. D., died suddenly and unexpectedly at a local infirmary in the city of Nashville, at 10:30 p m., Saturday, Dec. 10, 1910, his death following an accident, his buggy having been run into by a taxicab as he was returning from visiting a patient.

Dr. Stephens was born at Chapel Hill, Marshall County, Tenn., Oct. 18, 1834, and received his medical education at the Medical Department of the University of Nashville, graduating in 1857. After graduating he practiced a number of years at Como, Tenn., where he is still most kindly remembered by a large number of friends. His wife who was a Miss Annie Eliza Gardner, died about five years ago. He was the father of two children, Dr. Ernest L. Stephens, of Fort Worth, Texas, and a daughter, Miss Eugenia, who died in early womanhood. From Como, Dr. Stephens came to Nashville, where he has been actively engaged in general practice for thirty-five years past,

and was well and widely known, enjoying the confidence of a large and appreciative clientele.

He was a son of Rev. Jeremiah Stephens, a zealous and faithful minister of the Primitive Baptist Church. He was a brother of Rev. J. Bunyan Stephens, M. D., a prominent Primitive Baptist preacher as well as a practitioner of medicine in the city of Nashville. Another brother, Dr. J. King Stephens, of Bald Knob, Ark., and a sister, Mrs. Joe Lofton, of Chapel Hill, Tenn., also survive him.

In the death of Dr. Stephens the city and state have lost a valuable and most useful citizen, his church a devout and highly esteemed and respected member, and the medical profession and this State Medical Association an ethical, courteous and earnest colleague.

Appropriate resolutions were adopted by the Nashville Academy of Medicine, he being one of the organic members of that association and one of its ex-presidents.

C. V. STEPHENSON, M. D.

DR. A. M. TRAWICK.

Dr. A. M. Trawick died May 8, at his residence, 1513 Hayes street, Nashville, Tenn., aged 65 years.

Dr. Trawick was born near Huntingdon, Carroll County, Tenn., Oct. 8, 1846, enlisted as a private in the Confederate army at the age of 15. After the close of the war he began the study of medicine and graduated from Louisville Medical College in 1867. He practiced his profession in Henry, Stewart and Montgomery counties, removing to Nashville about seven years ago, where he achieved great success as a physician. He was a member of the American Medical Association and the Nashville Academy of Medicine.

Dr. A. M. Trawick was the eleventh President of the Nashville Academy of Medicine. In years of affiliation he was one of its oldest members; in faithfulness of attendance at its meetings and in the abiding interest, he maintained in the organization, he was almost, if not quite, in a class by himself. Standing always inflexibly for principle, and having the courage

to announce his convictions freely and fearlessly at all times, he was a figure of commanding influence in the deliberations of the Academy, whether the subject under discussion happened to be of a strictly scientific nature or one of business policy. And, however widely known his views might differ from those of his fellows, he never failed to receive that patient and respectful hearing which is the universal and spontaneous tribute to lofty character.

Whatever the occasion for remarks Dr. Trawick seldom resumed his seat without some expression of fraternal affection and good will. He loved the Academy and the Academy loved and honored him.

Resolved, That in the death of Dr. A. M. Trawick the Nashville Academy of Medicine and Davidson County Medical Society has lost one of its most faithful and valued members, whose hearty presence and earnest counsels will be sadly missed.

Resolved, further, That a copy of these resolutions be spread upon the minutes, a copy furnished to the daily press for publication, and a copy forwarded to his stricken family.

A. B. COOKE,
GEO. H. PRICE,
W. A. BRYAN,
Committee.

WILLIAM A. DUNCAN, M. D., Chattanooga Medical College, 1898. Died of tuberculosis, aged 35, at the home of his parents in Chattanooga, Tenn., on May 4. He was President of the Chattanooga Academy of Medicine and Hamilton County Medical Society during 1910. A member of the Tennessee State Medical Association, American Medical Association and Association of Southern Railway Surgeons. He served one term as city physician of Chattanooga and otherwise identified with the health boards of his community. He was a leading member of the surgical staff of Erlanger Hospital, and before his health compelled him to retire, was surgeon for many of the railway systems centering at Chattanooga.

Respectfully submitted,

H. P. LARIMORE,
Secretary.

A memorial meeting in memory of Dr. Wm. A. Duncan will be held by the Chattanooga Medical Society on May 12. Resolutions of respect will at that time be adopted.

Dr. J. R. Shapard died April 18 at his home, 501 Woodland street, Nashville, Tenn., aged 57 years.

Dr. Shapard was born in Scottsville, Ky., and studied medicine in Nashville, Louisville and New York. After graduation he practiced medicine in his own town and also at Wellington, Kansas, and came here sixteen years ago where he achieved great success as a physician. He was a member of the Tennessee State Medical Association and the Nashville Academy of Medicine.

Dr. John Quarles Sutton, born in Shelbyville, Tennessee, in 1862 and died of cancer of the stomach, at Chattanooga, May 12, 1911. He was a graduate of Vanderbilt Medical Department 1887; a member of Chattanooga Medical Society and State Association. He practiced in Chattanooga for twelve years.

Resolutions of respect were passed by the Chattanooga Academy of Medicine at a memorial meeting held in memory of Dr. W. A. Duncan and Dr. J. Q. Sutton on May 12.

Dr. Cameron Piggott, Professor of Chemistry in the University of the South, at Sewanee, died April 30, aged 55 years. Dr. Piggott was born in Baltimore, Md., and was a graduate of Johns Hopkins University. He is survived by his wife and one son, Charles, of Baltimore.

Dr. John Clayton Abernathy, one of the oldest and most prominent physicians of East Tennessee, died April 20, at the home of his son, Dr. J. Y. Abernathy, of Chattanooga, in the 88th year of his age.

Dr. Richard D. King, formerly of Gallatin, died May 1, at his home in Whitewright, Texas. He was born in Gallatin in 1827. Graduated in Nashville, and removed to Texas in 1851 and became a prominent physician of Northern Texas.

Dr. J. T. Williams, for many years a

prominent physician and City Health Officer of Bristol, died at the family home, April 25, aged 58 years. He is survived by his wife and several children.

Dr. Rufus E. Davidson, of Wartrace, Tennessee, died at the residence of his son, W. A. Davidson, of Bessemer, Alabama, on April 23, after an illness lasting six weeks. Dr. Davidson was seventy-four years old and a member of one of Tennessee's most influential families.

NEWS NOTES AND COMMENT

The University of Nashville and Tennessee Medical Department held their 57th annual commencement at Vendome Theatre, Monday evening, May 1. A class of sixty-two were graduated. The address of the evening was made by Dr. Ira Landrith and the Faculty address by Dr. J. I. D. Hinds. Dr. D. R. Neil delivered the medals. The Founder's medal was awarded Dr. George Franklin Aycock, of Tennessee, while that from the University of Tennessee was awarded to Dr. Dabari Ram Pal, of India.

"Taking the class as a whole, with all things considered, I believe that it is the best one we have ever had," said Dr. W. H. Halbert, State Medical Examiner, in speaking of the first day's session of the annual examination by the State Medical Board. There are 114 applicants taking the examination at the new Masonic Temple.

The examination here is being conducted by Dr. Halbert, of Nashville, and Dr. C. A. Abernathy, of Pulaski, of the State Board. That at Memphis is under the direction of Dr. A. B. DeLoach, of Memphis, and Dr. Ambrose McCoy, of Jackson, and that at Knoxville, by Dr. E. E. Hunter, of Elizabethtown, and Dr. W. L. McCreary, of Knoxville.

While the class here is sixteen times smaller than that of last year, Doctor Halbert states that practically every one of the 114 are earnestly at work and he thinks the results show well.

A subsequent examination will be held for the benefit of those who fail to pass this time.

Forty-nine appeared before the Board of Knoxville, seven of this number were negroes.

Monday, May 1, was observed by the Public Schools of Nashville as Public Health Day.

At each of the city schools there were interesting lectures by scientific men. In these lectures the pupils were instructed on general health subjects with special reference to the prevention of tuberculosis. These talks were made in the various class rooms and halls and were more or less informal. In addition to this, literature was placed in the hands of the pupils in which health conditions and preservation was outlined in a manner that will prove practical and beneficial.

The purpose of this observation of Public Health Day is to instill into the minds of the youth of the city those health principles which will be most valuable to them throughout life and will be along the line of the campaign of health education which is being systematically followed throughout this and other states.

The Davidson County Court on April 22 accepted as a gift from the city of Nashville the Hamilton property, on the Buena Vista road, to be used as a tuberculosis hospital and made an appropriation of \$5,000 for improvements in the building and for maintenance of the institution.

The transfer of this property by the city to the county, imposes the care of the city's tuberculous patients upon the county.

The commission for the proposed hospital will consist of the Mayor of Nashville, City Health Officer, the County Judge, the County Health Officer, and 'Squire Read, who was elected as the one member of the county court.

On completion of the Hamilton National Bank building at the southwest corner Seventh and Market streets the Chattanooga Academy of Medicine will occupy the entire fourteenth floor. The Academy will rent from the Chamber of Commerce. The building will be completed about May 15,

this year. Seating capacity of the auditorium will be 300 to 400. It is well lighted, ventilation perfect, plenty of committee rooms and other facilities away up above the noise and dust—an ideal location.

The Chattanooga profession is already looking forward with great interest to the 1912 meeting of the Tennessee State Medical Association. They will do their utmost to make the meeting the best in the history of the state society. They will aid the officers of the state society in every way possible to insure results in point of attendance, advanced scientific program, side trips to points of historic interest, etc.

Extensive preparations are being made by the Marshall County Medical Society for the meeting of the Middle Tennessee Medical Society, which meets at Lewisburg on Thursday, May 18. Dr. S. T. Hardison will welcome the organization on behalf of the local profession and Mr. J. N. McCord on behalf of the citizens.

The Board of Education of Hamilton County have appointed Dr. T. J. Zeigler as Medical Director of the Schools. He will organize a practical working force for the adequate medical inspection of all school children. He hopes to secure the co-operation of physicians in the neighborhood of every school.

The West Tennessee Medical and Surgical Association convened in Dyersburg on May 10. An interesting and highly scientific program was completed and the visiting physicians were entertained with a basket dinner and fish fry at Reelfoot Lake, by the profession of Dyer County.

The Milk Commission appointed by the President of the Davidson County Society, is making rapid headway and promises in the near future to give Nashville some startling surprises in the way of pure milk.

The new Newell Infirmary is rapidly nearing completion. It will have thirty-five beds and is quite an addition to Chattanooga's hospital facilities.

The woman's ward for the treatment of tuberculosis, in connection with the Davidson County Asylum, has been opened for the reception of patients.

Dr. Richard A. Barr announces the opening of his new private infirmary at Nineteenth Avenue and Division Street, Nashville, Tennessee.

The Dutch supper tendered the Association by the local profession at the Rathskeller of the Hermitage was a most enjoyable affair.

Dr. Chas. N. Cowden announces the removal of his office from 118 Eighth Avenue, North, to 312-15 Eve Building, Nashville, Tenn.

The Kings Daughters are making a very strong effort to raise funds for the enlargement of the Home for Incurables at Memphis.

Drs. Crockett, Witt, Harris, and Bloomstein, of Nashville, are spending the summer in London and continental Europe.

Dr. J. B. Murphy, President of the A. M. A., who has been very ill with typhoid fever, is reported much improved.

Dr. Chalmers Deadrick and Dr. W. S. Nash, of Knoxville, returned recently from several weeks' stay in Southern Florida. Both Dr. Nash and Dr. Deadrick are fine fishermen, and enjoyed the sport greatly. It is needless to say that they brought back with them the usual number of fish stories.

The Knoxville General Hospital has secured the services of Miss Lucca K. Wagner as directress of nurses. Miss Wagner had her training in New York, and has since been in active service in Maryland and New York, and comes to the Knoxville General Hospital with splendid recommendations from those in charge of the hospitals where she has served.

Dr. Holtzelaw, of Chattanooga, sailed the latter part of April for a cruise around the world.

Dr. Newell's new private infirmary at Chattanooga is nearing completion.

MARRIED.

The wedding of Miss Mary Polk to Dr. Jno. W. Moore, of Nashville, took place at Sylvan Hall, the home of the bride on April 26.

The marriage of Miss Artimesia Barrow, daughter of Dr. David Barrow, of Lexington, Kentucky, to Dr. Wm. T. Briggs, Jr., of Nashville, Tenn., took place April 26, at Christ Church, Lexington, Ky.

BOARD OF EXAMINERS FOR NURSES APPOINTED BY THE GOVERNOR.

Governor Hooper, acting under the provisions of the general law passed at the present session of the General Assembly, has appointed the members of the State Board of Examiners of Nurses, a board created for the first time in Tennessee. Five women were named as follows: Miss Viola M. Barnes and Miss Malvina Nisbit, Nashville; Mrs. Lena A. Warner and Miss Levinia Dunnivant, Memphis, and Miss Ophelia Hornsby, Knoxville.

The middle and western divisions get two members each, and East Tennessee one, it being agreed that the east section should draw two members the next time. The board members serve for five years, and any vacancy on the board is filled by the remaining members. The Governor re-appoints five years hence, but he is not allowed to name any one who has not the indorsement of the local society of the applicant. Two old members must always be retained on the board when the re-appointments are made.

The members do not draw any pay, but their expenses are paid out of the fund secured from the certificates issued, for which a charge of \$5 is made. The registration of this certificate with the county court clerk where the nurse resides costs 50 cents, and this registration calls for a license that entitles the trained nurse to practice her profession.

The members of the board appointed by the Governor must meet in the next sixty days for organization, and must select a chairman and secretary. Nurses must procure certificates from the board within sixty

days after the organization, and this must be recorded with the county court clerk. The certificates are not granted unless the applicant has had as much as two years' service in a Tennessee school or authority from some outside institution.

The secretary must keep a record of all certificates issued and the county court clerk must also keep a record of the certificates upon which he issues the license to each particular nurse. The board must meet in each grand division of the state as often as once each year to examine applicants, the meeting places being Memphis, Knoxville and Nashville.

Nurses who have been serving for as long as five years will be granted licenses if they show to the satisfaction of the board their ability to mentally, morally and physically continue to practice their profession. This rule shall also apply to senior pupils. The licenses to these classes must be procured before June 1, 1911. As it is only three weeks until that time, the board will be busy issuing certificates after the organization.

The law enacted does not apply to those who nurse gratis or persons who do not claim to be "licensed nurses." No one can serve as a trained nurse without a certificate after six months' time from the passage of the bill. No one can take the position of a licensed nurse without having a license and no drug store can keep a list of the unlicensed nurses unless it is expressed on the list that the person is unlicensed.

The fine for the violation of the law is from \$25 to \$250. A certificate may be revoked for drunkenness, drug addiction, neglect of a patient, conviction of felony, crimes, incompetency or immorality. They must, however, be given a trial and thirty days' notice of trial.

SOCIETY PROCEEDINGS

THE TENNESSEE STATE MEDICAL ASSOCIATION.

A complete list of those who have paid Association dues for 1911 will be published in this and occasionally in succeeding numbers of the Journal. The list published below includes only those whose dues were received by the Treasurer up to May 1. Errors in name or address should be reported to Secretary Breunberg at once to facilitate prompt correction.

This list, as published, constitutes the mailing list of the Journal, and any member failing to receive his Journal is requested to write for a duplicate copy. No name has been intentionally left off. If your name does not appear, be kind

enough to notify the Secretary, so that he may make the correction.

Name	Address	County
Beasley, E. M.,	Coal Creek	Anderson
Carden, W. L.,	Andersonville	Anderson
Cox, Joe M.,	Edgemore	Anderson
Eblin, W. E.,	Wind Rock	Anderson
Ford, E. H.,	Coal Creek	Anderson
Hall, S. B.,	Clinton	Anderson
Haun, L. A.,	Pres., Coal Creek	Anderson
Hayes, J. T.,	Oliver Springs	Anderson
Hicks, H. D.,	Clinton	Anderson
Lambdin, L.,	Andersonville	Anderson
Morgan, C. H.,	Pless	Anderson
Phillips, Thos. H.,	Secy., Briceville	Anderson
Richards, W. D.,	Briceville	Anderson
Taylor, J. G.,	Clinton	Anderson
Coble, T. J.,	Shelbyville	Bedford
Dyer, J. H.,	Wartrace	Bedford
Freeman, J. K.,	Bellbuckle	Bedford
Frierson, W. G.,	Shelbyville	Bedford
Horton, G. E.,	Pres., Wartrace	Bedford
Landis, G. L.,	Unionville	Bedford
Moody, G. W.,	Shelbyville	Bedford
Moody, S. S.,	Shelbyville	Bedford
Moon, W. A.,	Bellbuckle	Bedford
Orr, W. M.,	Shelbyville, R. F. D. 1.	Bedford
Pyatt, W. S.,	Normandy	Bedford
Patton, E. W.,	Flat Creek	Bedford
Ray, T. R.,	Normandy	Bedford
Robinson, W. G.,	Fall Creek	Bedford
Reagor, F. B.,	Secy., Shelbyville	Bedford
Sharp, W. T.,	Shelbyville, R. F. D. 1.	Bedford
Sunstrom, C. A. G.,	Beech Grove	Bedford
Taylor, J. P.,	Haley	Bedford
Woods, T. H.,	Bellbuckle	Bedford
Fisher, R. J.,	Unionville	Bedford
Bean, R. L.,	Cleveland	Bradley
Chambers, T. E. P.,	Secy., Cleveland	Bradley
Gates, B. F.,	Cleveland	Bradley
Kibler, R. O.,	Cleveland	Bradley
McKamy, T. J.,	Cleveland	Bradley
Quinn, B. A.,	Cleveland	Bradley
Ramsey, G. A.,	Cleveland	Bradley
Sullivan, R. T.,	Cleveland	Bradley
Schultz, H. W.,	Cleveland	Bradley
Speck, C. T.,	Pres., Cleveland	Bradley
Shugart, J. L.,	Cleveland	Bradley
Sullivan, W. H.,	Tasso	Bradley
Taylor, R. L.,	Cleveland	Bradley
Brown, B. B.,	Peabody	Campbell
Gallagher, R. L.,	Careyville	Campbell
Hefferman, R. L.,	Jellico	Campbell
Lawson, A. L.,	Elk Valley	Campbell
Lane, J. F.,	Wooldridge	Campbell
McClintock, F. A.,	Secy.	Newcomb
Newman, A. T.,	Jellico	Campbell
Quener, S. D.,	Jasboro	Campbell
Rose, J. L.,	Jellico	Campbell
Robbins, H. M.,	Jellico	Campbell
Scott, L. M.,	Pres., Jellico	Campbell
Snyder, S. B.,	Jellico	Campbell
Bryant, G. C.,	McLemoresville	Carroll
Memison, A. B.,	Trezevant	Carroll
McCall, J. W.,	Huntingdon	Carroll
Wright, W. M.,	Huntingdon	Carroll
Cook, H. W.,	Alamo	Crockett
Conyers, D. J.,	Chestnut Bluff	Crockett
Dodds, O. L.,	Eaton	Crockett
Eason, W. B.,	Bells	Crockett
Goodwin, I. L.,	Halls	Crockett
Harris, J. H.,	Bells	Crockett
Jones, F. C.,	Gadsden	Crockett
Love, C. T.,	Pres., Alamo	Crockett
McDonald, S. E.,	Secy., Bells	Crockett

Name	Address	County	Name	Address	County
Oncil, M. E., Bells, R. F. D.	Crockett		Nashville	Davidson	
Powell, Jno. L., Friendship	Crockett		Glenn, W. F., 1st Natl. Bank Bldg., Nashville	Davidson	
Spence, W. L., Chestnut Bluff	Crockett		Glasgow, McP., Worthington Flats, Nashville	Davidson	
Tullos, A. M., Gadsden	Crockett		Gleaves, E. L., 111½ Union St., Nash- ville	Davidson	
Hager, J. F., Isoline	Cumberland		Goodwin, J. D., 1012 1st Natl. Bank Bldg., Nashville	Davidson	
Lewis, V. L., Pres., Crossville	Cumberland		Grizzard, R. W., 302 6th Ave., N., Nash- ville	Davidson	
McCamy, W. R., Crab Orchard	Cumberland		Haggard, W. D., 148 8th Ave., N., Nash- ville	Davidson	
McClarney, A. J., Crossville	Cumberland		Hale, G. W., Wilcox Bldg., Nashville	Davidson	
Mitchell, E. W., Crossville	Cumberland		Handley, J. W., 1st Natl. Bank Bldg., Nashville	Davidson	
Southard, Dallas, Sec'y., Crossville, ...	Cumberland		Hargis, W. A., R. B. Del., Hermitage	Davidson	
Altman, J. T., 702 Church St., Nashville	Davidson		Harris, A. W., 142 7th Ave., N., Nash- ville	Davidson	
Anderson, C. F., Eve Bldg., Nashville	Davidson		Harris, J. E., P. O. Box 404, Nashville	Davidson	
Anderson, W. B., Broad and 12th Aves., Nashville	Davidson		Harrington, R. A., 8th Ave. and Broad- way, Nashville	Davidson	
Bailey, Wm., Jackson Bldg., Nashville	Davidson		Hatcher, G. E., Cent. Hosp. for Insane, Nashville	Davidson	
Barr, R. A., 1st Natl. Bank Bldg., Nash- ville	Davidson		Head, F. F., West Nashville	Davidson	
Bell, C. Bailey, 135 8th Ave., N., Nash- ville	Davidson		Hibbett, W. E., Waverly Place, Nash- ville	Davidson	
Billington, R. W., Worthington Flats, Nashville	Davidson		Hill, C. L., Edgar Jones Ave., Nashville	Davidson	
Black, W. G., 1421 Church St., Nash- ville	Davidson		Haskins, J. B., 148 7th Ave., N., Nash- ville	Davidson	
Bloomstein, S. M., Worthington Flats, Nashville	Davidson		Hollabaugh, A. N., 801 5th Ave., S., Nashville	Davidson	
Briggs, W. T., Cor. Union and 5th Ave., Nashville	Davidson		Hubbard, G. W., 112 Maple St., Nashville	Davidson	
Britt, B. E., Jackson Bldg., Nashville	Davidson		Hudson, Alberto, Jackson Bldg., Nash- ville	Davidson	
Bromberg, Perry, Jackson Bldg., Nash- ville	Davidson		Jones, R. L., 151 8th Ave., N., Nashville	Davidson	
Bryan, W. A., 146 8th Ave., N., Nash- ville	Davidson		Keys, Richard, City Hospital, Nashville	Davidson	
Bryan, O. N., 146 8th Ave., N., Nash- ville	Davidson		Keller, J. P., Worthington Flats, Nash- ville	Davidson	
Brooks, H. T., 1024 S. 2nd Ave., Nash- ville	Davidson		King, J. M., Eve Bldg., Nashville	Davidson	
Brown, C. W., 418 Monroe St., Nashville	Davidson		Lee, W. B., Jackson Bldg., Nashville	Davidson	
Brush, C. E., 118 N. 8th Ave., Nashville	Davidson		Leonard, N. C., 140 8th Ave., N., Nash- ville	Davidson	
Buckner, M. G., Jackson Bldg., Nashville	Davidson		Litterer, William, Vanderbilt Med. Col., Nashville	Davidson	
Buist, W. E., 213 8th Ave., N., Nashville	Davidson		Levy, Louis, 1st Natl. Bank Bldg., Nash- ville	Davidson	
Burch, L. E., 120 8th Ave., N., Nashville	Davidson		Lee, J. M., 169 4th Ave., N., Nashville	Davidson	
Caldwell, Roht., Pres., Jackson Bldg., Nashville	Davidson		McCampbell, W. E., 6th and Woodland Sts., Nashville	Davidson	
Coles, Van H., 1505 Church St., Nash- ville	Davidson		McGannon, M. C., 118 8th Ave., N., Nashville	Davidson	
Cooke, A. B., Jackson Bldg., Nashville	Davidson		Maddin, J., 169 4th Ave., N., Nashville	Davidson	
Cowden, C. N., Eve Bldg., Nashville	Davidson		McCabe, W. M., City Hospital, Nashville	Davidson	
Crockett, S. S., Jackson Bldg., Nashville	Davidson		Magan, Lillian E., Madison	Davidson	
Crawford, J. P., Jackson Bldg., Nashville	Davidson		Marr, Harrington, Mill Block, Church, Nashville	Davidson	
Cullom, M. M., Hitchcock Bldg., Nash- ville	Davidson		Meadows, Joe T., 1st Natl. Bank Bldg., Nashville	Davidson	
Dabney, A. S., Eve Bldg., Nashville	Davidson		Miller, J. P., 208 8th Ave., N., Nashville	Davidson	
Dake, Richard W., 216 7th Ave., N., Nashville	Davidson		Morgan, H. W., 211 6th Ave., N., Nash- ville	Davidson	
Davis, M. O., 204 6th Ave., S., Nashville	Davidson		Moore, J. W., Worthington Flats, Nash- ville	Davidson	
DeWitt, Paul, Eve Bldg., Nashville	Davidson		Morrison, W. J., 8th Ave. and Commerce, Nashville	Davidson	
Dixon, W. C., Secy., 150 8th Ave., N., Nashville	Davidson		Minor, Dabney, Nashville	Davidson	
Doak, R. S., 139 8th Ave., N., Nashville	Davidson		Neil, D. R., Jackson Bldg., Nashville	Davidson	
Douglas, A. E., Central Hospital, Nash- ville	Davidson		Nichol, A. G., Jackson Bldg., Nashville	Davidson	
Evans, N. G., 2nd Ave. and Elm., Nash- ville	Davidson		Noel, L. G., 529½ Church St., Nashville	Davidson	
Edwards, G. P., Jackson Bldg., Nashville	Davidson		O'Callahan, W. J., Post Office, Nashville	Davidson	
Eve, Duncan, Eve Bldg., Nashville	Davidson		Overton, John, Douglas Infirmary, Nash- ville	Davidson	
Eve, Duncan, Jr., Eve Bldg., Nashville	Davidson		Oughterson, W. A., 135 8th Ave., N., Nashville	Davidson	
Eve, Paul F., Eve Bldg., Nashville	Davidson				
Fort, R. E., 209 7th Ave., N., Nashville	Davidson				
Frey, J. H., Edgar Ave., Nashville	Davidson				
Gaines, Jno. A., Jackson Bldg., Nashville	Davidson				
Gallagher, J. F., Jackson Bldg., Nash- ville	Davidson				
George, L., Battle Creek Sanitarium, Nashville	Davidson				
George, W. A., Battle Creek Sanitarium,					

Name	Address	County	Name	Address	County
Omohundro, O. C., Nashville		Davidson	Harper, T. M., Dickson	.....	Dickson
Owsley, J. Q., 420½ Union St., Nash- ville		Davidson	Scott, W. S., Dickson	.....	Dickson
Padgett, Hazle, Hitchcock Bldg., Nash- ville		Davidson	Suggs, W. J., Pres., Dickson	.....	Dickson
Pickens, D. R., 135 8th Ave., N., Nash- ville		Davidson	Walker, W. W., Secy., Dickson	.....	Dickson
Plunkett, J. D., 701½ Church St., Nash- ville		Davidson	Weaver, H., Dickson	.....	Dickson
Pollard, T. G., 135 8th Ave., N., Nash- ville		Davidson	Brewer, J. D., Newbern	.....	Dyer
Price, Geo. H., 146 8th Ave., N., Nash- ville		Davidson	Cherry, E. O., Newbern	.....	Dyer
Parrish, W. A., Campbellville, Fla.		Davidson	Dulaney, O., Pres., Dyersburg	.....	Dyer
Roberts, Deering J., 208 6th Ave., N., Nashville		Davidson	Edwards, Luther, Finley	.....	Dyer
Robertson, C. A., 151 8th Ave., N., Nash- ville		Davidson	Flanary, D. L., Dyersburg	.....	Dyer
Roberts, E. L., 131 8th Ave., N., Nash- ville		Davidson	Fowlkes, J. A., Dyersburg	.....	Dyer
Sharber, A. L., 142 7th Ave., N., Nash- ville		Davidson	Haskins, E. T., Newbern	.....	Dyer
Sanders, E. M., 148 7th Ave., N., Nash- ville		Davidson	Hicks, H. E., Newbern	.....	Dyer
Savage, G. C., 139 8th Ave., N., Nashville		Davidson	Holland, W. W., Dyersburg	.....	Dyer
Shannon, T. G., Woodland and 4th, Nashville		Davidson	McDavid, Paul, Menglewood	.....	Dyer
Sifford, W. R., 1st Natl. Bank Bldg., Nashville		Davidson	Morgan, G. D., Lane	.....	Dyer
Smith, Larkin, 131 8th Ave., N., Nash- ville		Davidson	Moody, A. H., Secy., Dyersburg	.....	Dyer
Stevens, Jno. W., R. F. D. 1, Nashville		Davidson	Price, J. G., Dyersburg	.....	Dyer
Stonestreet, Reginald, Hitchcock Bldg., Nashville		Davidson	Rawles, E. L., Dyersburg	.....	Dyer
Sullivan, C. C., 131 8th Ave., N., Nash- ville		Davidson	Rawles, I. N., Dyersburg	.....	Dyer
Sumpter, W. D., 131 8th Ave., N., Nash- ville		Davidson	Turner, C. A., Dyersburg	.....	Dyer
Sneed, W. L., Station B., Nashville		Davidson	Walker, N. S., Dyersburg	.....	Dyer
Shoulders, H. H., Nashville		Davidson	Walker, T. J., Dyersburg	.....	Dyer
Tankesley, W. H., Waverly Place, Nashville		Davidson	Watson, W. P., Dyersburg	.....	Dyer
Teachout, S. R., 702 Church St., Nash- ville		Davidson	Wynne, J. W., Newbern	.....	Dyer
Tigert, H. M., Worthington Flats, Nash- ville		Davidson	Albright, J. A., Somerville	.....	Fayette
Trawick, G. C., 210 6th Ave., N., Nash- ville		Davidson	Boals, A. O., Pres., Somerville	.....	Fayette
Tucker, B. G., 302 S. 10th St., Nashville		Davidson	Crock, C. N., Somerville	.....	Fayette
Tucker, R. O., 140 8th Ave., N., Nash- ville		Davidson	Moorman, H. C., Secy., Somerville	.....	Fayette
Thach, A. B., 148 7th Ave., N., Nashville		Davidson	Robertson, C. W., Somerville	.....	Fayette
Tidwell, G. W., 131 8th Ave., N., Nash- ville		Davidson	Bennett, B. T., Trenton	.....	Gibson
Weaver, Thos., Jackson Bldg., Nashville		Davidson	Cloyton, A. T., Milan	.....	Gibson
West, Olin, Worthington Flats, Nash- ville		Davidson	Caldwell, B. D., Milan	.....	Gibson
White, Geo. R., 24 Bridge Ave., Nash- ville		Davidson	Dadds, G. W., Trenton	.....	Gibson
White, Gordon, 610½ Church St., Nash- ville		Davidson	Faucett, J. T., Trenton	.....	Gibson
Wilson, O. H., Worthington Flats, Nash- ville		Davidson	Hunt, R. H., Humboldt	.....	Gibson
Witherspoon, Jno. A., 150 8th Ave., N., Nashville		Davidson	Harwood, T. E., Trenton	.....	Gibson
Witt, W. H., Worthington Flats, Nash- ville		Davidson	McRee, W. C., Secy., Trenton	.....	Gibson
Wood, T. Hillard, 1st Natl. Bank Bldg., Nashville		Davidson	Moore, J. C., Trenton	.....	Gibson
Loring, Chas., Smithville		DeKalb	Medling, W. L., Dyer	.....	Gibson
Potter, T. J., Pres., Smithville		DeKalb	Matthews, E. C., Trenton	.....	Gibson
Parker, W. B., Secy., Smithville		DeKalb	Penn, B. S., Pres., Humboldt	.....	Gibson
Parker, W. W., Smithville		DeKalb	Penn, G. W., Humboldt	.....	Gibson
Flowers, J. C., Dickson		Dickson	Preston, J. H., Humboldt	.....	Gibson
Guerin, H. C., Dickson		Dickson	Preston, W. F., Humboldt	.....	Gibson
			Paris, Jno. C., Kenton	.....	Gibson
			Oliver, G. W., Medina	.....	Gibson
			Rozelle, J. H., Gibson	.....	Gibson
			Thompson, Sidney, Humboldt	.....	Gibson
			Walker, D. A., Trenton	.....	Gibson
			Wyatt, F. E., Yorkville	.....	Gibson
			Tyree, C. E., Trenton	.....	Gibson
			Abernathy, C. A., Pulaski	.....	Giles
			Abernathy, W. D., Pulaski	.....	Giles
			Abernathy, Shields, Secy., Pulaski	.....	Giles
			Allen, A. M., Buford Station	.....	Giles
			Bugh, Jno. E., Elkton	.....	Giles
			Black, Wm. E., Minor Hill	.....	Giles
			Blackburn, Jas. K., Pulaski	.....	Giles
			Butler, Geo. D., Pulaski	.....	Giles
			Cole, Wm. H., Minor Hill	.....	Giles
			Copeland, W. F., Campbellsville	.....	Giles
			Dean, Allen W., Brick Church	.....	Giles
			Freeman, E. C., Pulaski	.....	Giles
			Grimes, G. C., Bodenham	.....	Giles
			Harris, Jno. S., Minor Hill	.....	Giles
			Herbert, Robt. N., Aspen Hill	.....	Giles
			Lancaster, A. J., Pisgah	.....	Giles
			Lancaster, Geo. W., Pisgah	.....	Giles
			LalRue, Jas. A., Pulaski	.....	Giles
			May, J. P., Pres., Aspen Hill	.....	Giles
			Marris, John H., Jr., Bodenham	.....	Giles
			Neal, J. R., Wales Station	.....	Giles
			Sumpter, E. R., Pulaski	.....	Giles
			Woodard, B. H., Elkton	.....	Giles

Name	Address	County	Name	Address	County
Whitfield, Thomas, Veto, Ala.		Giles	Eblen, Thos. N., Tyner	.....	Hamilton
Acuff, P. H., Secy., Washburn		Grainger	Ellis, C. C., Chattanooga	.....	Hamilton
Akers, R. M., Nero, Ky.		Grainger	Ellis, G. M., Chattanooga	.....	Hamilton
Atkins, C. A., Powder Springs		Grainger	Fancher, H. L., Chattanooga	.....	Hamilton
Campbell, J. H., Rutledge		Grainger	Fowler, S. A., Chattanooga	.....	Hamilton
Idol, Willis, Leas Springs		Grainger	Gentry, J. A., Chattanooga	.....	Hamilton
Idol, E. T., Washburn		Grainger	Gibbs, Vaulx, Chattanooga	.....	Hamilton
LeQuire, G. D., Rutledge		Grainger	Goodwin, J. L., Chattanooga	.....	Hamilton
Livingston, G. W., Neeton		Grainger	Graham, C. G., Chattanooga	.....	Hamilton
Neargaard, F. A., Rutledge		Grainger	Green, Jas. E., Chattanooga	.....	Hamilton
Pierce, J. W., Pres., Tate Springs		Grainger	Hale, B. C., Guild	.....	Hamilton
Wallace, R. M., Rutledge		Grainger	Hanna, J. E., Chattanooga	.....	Hamilton
Britton, F. C., Greeneville, R. F. D. 9.		Green	Hogshend, J. M., Chattanooga	.....	Hamilton
Brumley, S. T., Greeneville, R. F. D.		Green	Holtzclaw, C., Chattanooga	.....	Hamilton
Bailey, G. N., Baileyton		Green	Hope, W. T., Chattanooga	.....	Hamilton
Brown, I. B., Mosheim, R. F. D.		Green	Horton, J. W., Chattanooga	.....	Hamilton
Borden, H. S., Greeneville, R. F. D. 2.		Green	James, Thos. L., Orme	.....	Hamilton
Bell, Jas. B., Pres., Greeneville, R. F. D. 2.		Green	Larimore, H. P., Secy., Chattanooga	.....	Hamilton
Blanton, M. A., Secy., Baileyton, R. F. D. 1.		Green	McGhee, John B., Chattanooga	.....	Hamilton
Cloyd, J. W., Mosheim		Green	Newell, E. T., Chattanooga	.....	Hamilton
Fox, C. P., Greeneville		Green	Morris, D. C., Chattanooga	.....	Hamilton
Hays, G. S., Greeneville		Green	Nefe, A. A., Lookout Mountain	.....	Hamilton
Hawkins, W. H., Greeneville		Green	Newell, E. D., Chattanooga	.....	Hamilton
Huffaker, R. O., Chucky City		Green	Null, H. O., Ridgedale	.....	Hamilton
Holt, J. S., Midway		Green	Partridge, Jas., Chattanooga	.....	Hamilton
Jeffers, W. L., Baileyton		Green	Rathmell, J. R., Chattanooga	.....	Hamilton
Myers, E. M., Bulls Gap		Green	Reisman, E. E., Chattanooga	.....	Hamilton
Myers, E. M., Bulls Gap		Green	Richardson, R. M., Guild	.....	Hamilton
Ruble, H. H., Greeneville		Green	Selden, J. M., Chattanooga	.....	Hamilton
Robinson, F. P., Greeneville, R. F. D.		Green	Spradling, L. W., Chattanooga	.....	Hamilton
Simpson, H. A., Afton, R. F. D.		Green	Stapp, Fred. B., Chattanooga	.....	Hamilton
Taylor, Wm. B., Greeneville		Green	Steele, Jno. B., Chattanooga	.....	Hamilton
Taylor, H. M., Greeneville		Green	Steele, M. C., Chattanooga	.....	Hamilton
Woolsey, Thos. H., Greeneville, R. F. D.		Green	Stem, L. T., East Lake, Tenn.	.....	Hamilton
Wilhoit, J. S. J., Afton, R. F. D.		Green	Tatum, R. H., Chattanooga	.....	Hamilton
Woodyard, S. W., Greeneville		Green	Taylor, J. H., Chattanooga	.....	Hamilton
Bales, Thos. E., Morristown		Hamblen	Travis, B. F., Chattanooga	.....	Hamilton
Brown, J. H., Talbott		Hamblen	Wagner, M. M., Guild	.....	Hamilton
Cass, H. M., Morristown		Hamblen	Wert, B. S., Chattanooga	.....	Hamilton
Dice, J. B. F., Morristown		Hamblen	West, Geo. R., Chattanooga	.....	Hamilton
Henderson, P. L., Morristown		Hamblen	Williams, G. V., Chattanooga	.....	Hamilton
Howell, W. E., Morristown		Hamblen	Williamson, L. C., East Lake	.....	Hamilton
Manard, J. J., Morristown		Hamblen	Wilson, H. B., Chattanooga	.....	Hamilton
Manker, R. A., Whitesburg		Hamblen	Wise, E. B., Chattanooga	.....	Hamilton
Milligan, L. H., Morristown		Hamblen	Woolford, J. S. B., Chattanooga	.....	Hamilton
Painter, F. F., Morristown		Hamblen	Wooher, A. B., Chattanooga	.....	Hamilton
Pangle, H. G., Russellville		Hamblen	Yarnell, S. T., Chattanooga	.....	Hamilton
Ruble, W. G., Morristown, Secy.		Hamblen	Zeigler, T. J., Chattanooga	.....	Hamilton
Shields, D. E., Morristown, Pres.		Hamblen	Clifton, Joe, Hickory Valley	.....	Hardeman
Walker, I. D., Alpha		Hamblen	Curry, G. B., Toone	.....	Hardeman
Woods, J. O., Morristown		Hamblen	Cocke, W. S., Bolivar	.....	Hardeman
Abernathy, Thos. E., Chattanooga		Hamilton	Dorris, H. E., Bolivar	.....	Hardeman
Abernathy, Y. L., Hill City		Hamilton	Goddard, W. L., Saulsbury	.....	Hardeman
Allen, Benj. G., Chattanooga		Hamilton	Milstead, H. W., Bolivar	.....	Hardeman
Anderson, E. B., Chattanooga		Hamilton	Neely, J. J., Bolivar	.....	Hardeman
Anderson, E. C., Chattanooga		Hamilton	Sassar, J. D., Sr., Pres., Middleton	.....	Hardeman
Anderson, W. E., Chattanooga		Hamilton	Tate, Robt. W., Secy., Bolivar	.....	Hardeman
Applegate, W. A., Washington D. C.		Hamilton	Allen, Jno. T., Brownsville	.....	Haywood
Atlee, Jas. H., Pres., Chattanooga		Hamilton	Cooper, Thos. W., Brownsville	.....	Haywood
Banks, W. A., Chattanooga		Hamilton	Dickson, A. C., Brownsville, R. F. D.	.....	Haywood
Barker, H. M., Alton Park		Hamilton	Edwards, Jos. L., Secy., Brownsville	.....	Haywood
Bell, Jas. T., Daisy, Tenn.		Hamilton	Heard, F. C., Brownsville, R. F. D.	.....	Haywood
Berlin, Henry, Chattanooga		Hamilton	Norvelle, J. C., Brownsville	.....	Haywood
Blackwell, O. L., Worley		Hamilton	Patton, J. S., Pres., Brownsville	.....	Haywood
Bogart, W. G., Chattanooga		Hamilton	Sorrell, A. H., Brownsville	.....	Haywood
Bogart, W. M., Hill City, Tenn.		Hamilton	Sevier, A. H., Brownsville	.....	Haywood
Brooks, J. C., Chattanooga		Hamilton	Summers, William, Brownsville, R. F. D.	.....	Haywood
Broyles, J. N., East Lake		Hamilton	Wilkerson, J. B., Brownsville	.....	Haywood
Byrd, E. H., East Chattanooga		Hamilton	Warren, J. W., Forked Deer	.....	Haywood
Calhoun, Jno. D., Ringold, Ga.		Hamilton	Arnold, J. M., Lexington	.....	Henderson
Cleary, A. D., Chattanooga		Hamilton	Davidson, R. H., Lexington	.....	Henderson
Cunningham, J. C., Hixson		Hamilton	England, J. H., Luray	.....	Henderson
Davis, K. D., Chattanooga		Hamilton	Hoswell, W. L., Wildersville	.....	Henderson
Dietrich, W. A., Chattanooga		Hamilton	Huntsman, W. F., Lexington	.....	Henderson
Dye, J. S., Chattanooga		Hamilton	Johnston, C. H., Secy., Lexington	.....	Henderson

Name	Address	County	Name	Address	County
Keeton, W. B.,	Scotts Hill.....	Henderson	Davis, Chas. Huff,	Empire Bldg., Knoxville...	Knox
Parker, S. T.,	Lexington.....	Henderson	Deaderick, Chalmers,	501 W. Church Ave., Knoxville...	Knox
Stinson, J. C.,	Center Point.....	Henderson	DeArmond, C. C.,	Empire Bldg., Knoxville...	Knox
Waller, A. L.,	Juno.....	Henderson	Frayser, B. H.,	Knoxville.....	Knox
Watson, W. T.,	Lexington.....	Henderson	Fritzgerald, T. F.,	R. F. D. No 1, Knoxville.....	Knox
Wyley, J. C.,	Scotts Hill.....	Henderson	Garrison, A. R.,	Byington.....	Knox
Abernathy, G. T.,	Paris.....	Henry	Greer, W. A.,	Ledgewick Bldg., Knoxville...	Knox
Grainger, R. A.,	Paris.....	Henry	Hill, O. W.,	Cherokee Bldg., Knoxville...	Knox
McSwain, J. H.,	Secy., Paris.....	Henry	Holloway, V. D.,	609 Walnut St., Knoxville...	Knox
McSwain, O. A.,	Paris.....	Henry	Jones, E. L.,	Ledgewick Bldg., Knoxville...	Knox
Paschal, A. F.,	Crossland.....	Henry	Jones, T. R.,	Walnut St., Knoxville.....	Knox
Perry, R. J.,	Springville.....	Henry	Jones, S. L.,	Knoxville.....	Knox
Rodgers, C. W.,	Pres., Como.....	Henry	Jones, C. B.,	Cherokee Bldg., Knoxville.....	Knox
Button, J. A.,	Coble.....	Hickman	Kelso, H. J.,	425 W. Church Ave., Knoxville...	Knox
Beasley, Jno. S.,	Centreville.....	Hickman	Kabler, W. F.,	Bristol.....	Knox
Beasley, R. P.,	Secy., Centreville.....	Hickman	Kennedy, J. M.,	N. Central, Knoxville.....	Knox
Cage, W. D.,	Coble.....	Hickman	Keen, A. G.,	607 Walnut St., Knoxville.....	Knox
Cooper, J. D.,	Smruse.....	Hickman	Kincaid, J. H.,	421 W. Church Ave., Knoxville.....	Knox
Flowers, D. W.,	Little Lot.....	Hickman	Kyle, A. G.,	Deaderick Bldg., Knoxville.....	Knox
Stephenson, C. V.,	Centreville.....	Hickman	Luttrell, Walter,	504 Asylum, Knoxville.....	Knox
Webb, J. B.,	Goodrich.....	Hickman	Lones, C. E.,	McTownlee Bldg., Knoxville...	Knox
Binkley, D. C. K.,	Hustburg.....	Humphreys	Lynn, W. N.,	L. M. Hospital, Knoxville.....	Knox
Cooley, J. T.,	Waverly.....	Humphreys	McCampbell, H. H.,	614 Walnut St., Knoxville.....	Knox
Coke, F. H.,	Hustburg.....	Humphreys	McCown, R. M.,	W. Church Ave., Knoxville...	Knox
Daniel, W. H.,	Secy., McEwen.....	Humphreys	McNabb, C. P.,	904 S. Gay St., Knoxville...	Knox
Gould, H. F.,	Pres., Hustburg.....	Humphreys	McReynolds, R. L.,	Knoxville.....	Knox
Horne, W. B.,	Plant.....	Humphreys	Miller, J. E.,	Rogersville.....	Knox
Slayden, W. W.,	Waverly.....	Humphreys	Miller, S. M.,	209 W. Church Ave., Knoxville...	Knox
Smith, J. N.,	Cuba Landing.....	Humphreys	Miller, S. A.,	406 W. Church Ave., Knoxville...	Knox
Sugg, J. A.,	McEwen.....	Humphreys	Newman, W. S.,	406 W. Church Ave., Knoxville.....	Knox
Teas, J. J.,	Waverly.....	Humphreys	Richmond, W. D.,	Empire Bldg., Knoxville...	Knox
Hix, J. B.,	Flynn's Lick.....	Jackson	Ristine, C. E.,	McNutt Bldg., Knoxville...	Knox
Loftis, H. P.,	Pres., Gainesboro.....	Jackson	Rule, A. L.,	W. Church Ave., Knoxville...	Knox
Mabry, E. W.,	Secy., Gainesboro.....	Jackson	Rogers, K. E.,	Cherokee Bldg., Knoxville...	Knox
Quarles, J. D.,	Whitleyville.....	Jackson	Rogers, J. W.,	Knoxville.....	Knox
Reeves, C. E.,	Gainesboro.....	Jackson	Sheddan, L. L.,	419 W. Church Ave., Knoxville.....	Knox
Anderson, J. C.,	Pres., Dandridge.....	Jefferson	Sisk, J. A.,	Empire Bldg., Knoxville.....	Knox
Cline, B. E.,	Strawberry Plains.....	Jefferson	Swaney, O. M.,	Treadway.....	Knox
Caldwell, J. M.,	Jefferson City.....	Jefferson	Tillery, J. P.,	419 W. Church Ave., Knoxville.....	Knox
Cooper, W. S.,	White Pine.....	Jefferson	Vance, W. K.,	Bristol.....	Knox
Dukes, N. M.,	Strawberry Plains.....	Jefferson	Wallace, W. L.,	N. Broadway, Knoxville...	Knox
French, T. R.,	Dandridge.....	Jefferson	West, J. Q. A.,	Arnstein Bldg., Knoxville.....	Knox
Higgins, J. L.,	Secy., Dandridge.....	Jefferson	West, W. J.,	Empire Bldg., Knoxville.....	Knox
King, W. F.,	Jefferson City.....	Jefferson	White, W. H. L.,	Young Bldg., Knoxville.....	Knox
Roberts, W. E.,	Talbots.....	Jefferson	Wilder, Dora Lee,	R. F. D. No. 1, Knoxville...	Knox
Tadlock, W. L.,	Talbots.....	Jefferson	Williams, D. H.,	613 Walnut St., Knoxville.....	Knox
Tittsworth, B. M.,	Jefferson City.....	Jefferson	Young, B. F.,	Young Bldg., Knoxville.....	Knox
Tinsley, P. A.,	Dandridge.....	Jefferson	Zemp, E. R.,	617 Walnut St., Knoxville...	Knox
Tar, H. L.,	Jefferson City.....	Jefferson	Adams, Jno. D.,	Bessie.....	Lake
Walker, Jas. H.,	White Pine.....	Jefferson	Alexander, W. S.,	Ridgely.....	Lake
Wagner, P. L.,	New Market.....	Jefferson	Alexander, J. D.,	Secy., Tiptonville.....	Lake
Acuff, S. D.,	1311 Central Ave., Knoxville...	Knox	Griffin, J. T.,	Tiptonville.....	Lake
Atchley, W. P.,	Empire Bldg., Knoxville...	Knox	Griffin, R. B.,	Ridgely.....	Lake
Armstrong, W. H.,	Rogersville.....	Knox	Griffin, R. W.,	Tiptonville.....	Lake
Anstin, W. S.,	Knoxville.....	Knox	Hellen, R. B.,	Ridgely.....	Lake
Alexander, Eben,	423 Church Ave. W., Knoxville.....	Knox	Kelty, E. T.,	Cronansville.....	Lake
Booker, G. W.,	The Oxford, Knoxville.....	Knox	Smith, A. P.,	Ridgely.....	Lake
Blankenship, J. P.,	W. Church Ave., Knoxville.....	Knox	Wright, J. M.,	Pres., Tiptonville.....	Lake
Bosworth, B. D.,	Maryville.....	Knox	Lackey, W. K.,	Ripley.....	Lauderdale
Boyd, S. B.,	Prince & Cumberland, Knoxville...	Knox	Lackey, J. B.,	Ripley.....	Lauderdale
Bowen, Wm.,	Broad & Central, Knoxville...	Knox	Lewis, J. R.,	Secy., Ripley.....	Lauderdale
Bull, C. G.,	Medical College, Knoxville...	Knox	Lusk, G. A.,	Ripley.....	Lauderdale
Campbell, Michael,	Lyonsview, Knoxville...	Knox	Miller, W. D.,	Pres., Ripley.....	Lauderdale
Carmichael, C. J.,	Walnut St., Knoxville...	Knox	Miller, T. E.,	Ripley.....	Lauderdale
Carmichael, J. W.,	Walnut St., Knoxville...	Knox	Miller, Thos.,	Halls.....	Lauderdale
Casenburg, S. F.,	McTammie Bldg., Knoxville...	Knox	Massengill, A. P.,	Halls.....	Lauderdale
Cates, B. B.,	508 W. Clinch Ave., Knoxville...	Knox	Kellner, T. B.,	Ripley.....	Lauderdale
Cochran, W. R.,	721 Walnut St., Knoxville...	Knox			
Copenhaver, M. M.,	Lonsdale.....	Knox			
Christenberry, H. E.,	Lonsdale.....	Knox			
Culliman, John, Jr.,	W. Church Ave., Knoxville.....	Knox			
Deprece, R. V.,	Medical College, Knoxville...	Knox			

Name	Address	County	Name	Address	County
Osteen, J. R., Ashport.....	Landerdale		Vaden, W. E., Rich Creek.....	Marshall	
Porter, J. A., Ripley.....	Landerdale		White, Buford, Lewisburg.....	Marshall	
Sandford, J. W., Ripley.....	Landerdale		White, Garreth, Chapel Hill.....	Marshall	
Sandford, W. C., Heming.....	Landerdale		Womack, C. W., Lewisburg.....	Marshall	
Sharpe, S. B., Heming.....	Landerdale		Anderson, H. O., Williamsport.....	Maury	
Trucker, W. H., Halls.....	Landerdale		Bumbrant, W. C., St. Joseph.....	Maury	
Walker, C. B., Ripley.....	Landerdale		Bensley, M. A., Hampshire.....	Maury	
Anderson, J. M., Fayetteville.....	Lincoln		Biddle, P. D., Columbia.....	Maury	
Ashley, T. E., Fayetteville, R. F. D. No 1.....	Lincoln		Church, R. M., Williamsport.....	Maury	
Blair, E. K., Fayetteville.....	Lincoln		Collins, E. E., Columbia.....	Maury	
Brock, B. B., Blanche.....	Lincoln		Cook, M. M., Secy., Santa Fe.....	Maury	
Farrar, J. P., Fayetteville, R. F. D., No. 8.....	Lincoln		Edwards, J. A., Columbia.....	Maury	
Cullum, J. M., Fayetteville.....	Lincoln		Hardin, Jas. O., (Vet.) Spring Hill.....	Maury	
Farrar, J. P., Fayetteville, R. F. D. No 1.....	Lincoln		Hardison, T. J., Carters Creek.....	Maury	
Forbes, E. C., Howell.....	Lincoln		Harrison, W. B., (Vet.), Columbia.....	Maury	
Gilliam, L. H., Kelso.....	Lincoln		Haywood, J. L., Carters Creek.....	Maury	
Goodrich, C. L., Fayetteville.....	Lincoln		Horsley, A. S., Columbia.....	Maury	
Graham, J. T., Fayetteville, R. F. D. No 1.....	Lincoln		Jones, Jas. H., Columbia.....	Maury	
Holland, E. F., Fayetteville, R. F. D. No. 1, Lincoln			Kittrell, W. H., Mt. Pleasant.....	Maury	
Joplin, W. S., Petersburg.....	Lincoln		Perry, R. S., Columbia.....	Maury	
McRady, S. F., Petersburg.....	Lincoln		Pillow, Robert, Columbia.....	Maury	
McWilliams, J. M., Fayetteville.....	Lincoln		Porter, O. J., Columbia.....	Maury	
Noblett, B. E., Pres., Fayetteville.....	Lincoln		Ragsdale, L. E., Williamsport.....	Maury	
Patrick, T. A., Secy., Fayetteville.....	Lincoln		Thomas, H. E., Pres., Columbia.....	Maury	
Shelton, J. M., Kelso, R. F. D. No 1.....	Lincoln		Timmmons, E. A., Columbia.....	Maury	
Sloan, J. E., Harms, R. F. D. No 1.....	Lincoln		Webb, W. R., Hampshire.....	Maury	
Summers, W. P., Harms, R. F. D. No 1.....	Lincoln		Wilkes, J. H., (Vet.), Columbia.....	Maury	
Wyatt, J. M., Fayetteville.....	Lincoln		Williamson, J. G., Jr., Columbia.....	Maury	
Yearwood, A. L., Fayetteville.....	Lincoln		Williamson, J. G., Sr., Columbia.....	Maury	
Burditt, G. M., Lenoir City.....	Loudon		Basinger, Jno. L., Riceville.....	McMinn	
Eblin, J. G., Lenoir City.....	Loudon		Brendle, D. P., Englewood.....	McMinn	
Fout, W. T., Lenoir City.....	Loudon		Buttraw, W. H., Niota.....	McMinn	
Harrison, J. J., London.....	Loudon		Copenhagen, L. A., Englewood.....	McMinn	
Hickman, T. J., Secy., Lenoir City.....	Loudon		Center, H. E., Etowah.....	McMinn	
Leiper, J. T., Pres., Lenoir City.....	Loudon		Creech, Richard, Englewood.....	McMinn	
Pagett, W. D., Lenoir City.....	Loudon		Force, J. O., Athens.....	McMinn	
Arnold, Jno., M., Jackson.....	Madison		Fronyberger, W. R., Pendergrast.....	McMinn	
Blackmon, Jno., A., Jackson.....	Madison		Kittrell, S. S., Englewood.....	McMinn	
Crook, J. L., Jackson.....	Madison		Moore, W. S., Secy., Athens.....	McMinn	
Crook, J. A., Jackson.....	Madison		Nichols, Jno. O., Etowah.....	McMinn	
Duckworth, W. C., Jackson.....	Madison		Nankivell, Jas. R., Pres., Athens.....	McMinn	
Drake, C. C., Jackson.....	Madison		Prondfoot, Jas. L., Athens.....	McMinn	
Dancy, A. B., Jackson.....	Madison		Stanton, G. W., Athens.....	McMinn	
Gresham, J. W., Jackson.....	Madison		Shipley, Gus, Athens.....	McMinn	
Greer, R. L., Norwood.....	Madison		Taylor, Henry F., Calhoun.....	McMinn	
Hawkins, Herman, Secy., Jackson.....	Madison		Vinsaut, Chas. C., Etowah.....	McMinn	
Hopper, J. D., Pres., Jackson.....	Madison		Bell, W. T., Selmer.....	McNairy	
Hamilton, F. B., Jackson.....	Madison		Boatman, J. A., Bethel Springs, R. R.		
Henderson, S. A., Jackson.....	Madison		No. 1.....	McNairy	
Herron, J. T., Jackson.....	Madison		Dodds, B. C., Secy., Gravelhill.....	McNairy	
Jones, Jas. T., Jackson.....	Madison		Hodges, W. H., Finger.....	McNairy	
Jones, H. L., Jackson.....	Madison		King, J. M., Ramer.....	McNairy	
Lusk, P. B., Jackson.....	Madison		Key, M. C., Ramer.....	McNairy	
Lockman, W. L., Medon.....	Madison		Smith, J. L., Selmer.....	McNairy	
McCoy, Ambrose, Jackson.....	Madison		Smith, J. R., Selmer.....	McNairy	
O'Connor, F. J., Jackson.....	Madison		Sanders, E. G., Stantonville.....	McNairy	
Raines, Jas. T., Malesus.....	Madison		Sanders, H. C., Pres., Selmer, R. R. No 1.....	McNairy	
Raines, Jessie, Malesus.....	Madison		Wallace, W. W., Selmer.....	McNairy	
Rochelle, W. F., Jackson.....	Madison		Brock, R. H., Sweetwater.....	Monroe	
Smythe, Kelly, Spring Creek.....	Madison		Bagwell, B. W., Madisonville.....	Monroe	
Troutt, J. M., Jackson.....	Madison		Davis, J. E., Secy., Sweetwater.....	Monroe	
Webb, L. L., Carroll.....	Madison		Hardin, J. H., Sweetwater.....	Monroe	
Williamson, Leon, Jackson.....	Madison		McClain, W. A., Sweetwater.....	Monroe	
Baxter, R. G., Carey Springs.....	Marshall		McCollum, J. A., Tariffville.....	Monroe	
Crunk, J. C., Luma.....	Marshall		Penland, S. N., Madisonville.....	Monroe	
Dryden, D. M., Petersburg.....	Marshall		Roberts, T. M., Pres., Sweetwater.....	Monroe	
Gault, F. H., Cornersville.....	Marshall		Shearer, H. C., Madisonville.....	Monroe	
Jones, Alf, Cornersville.....	Marshall		Brandau, Jno. W., Clarksville.....	Montgomery	
Hardison, C. C., Lewisburg.....	Marshall		Ezell, J. J., Clarksville.....	Montgomery	
Hardison, J. A., Pres., Lewisburg.....	Marshall		Hughes, M. L., Clarksville.....	Montgomery	
Hardison, S. T., Lewisburg.....	Marshall		Hunt, I. E., New Providence.....	Montgomery	
Logan, T. R., Lewisburg.....	Marshall		Macon, R. B., Clarksville.....	Montgomery	
Moffitt, S. A., Mooresville.....	Marshall		Marable, T. H., Clarksville.....	Montgomery	
Ransom, W. C., Farmington.....	Marshall		Morrison, J. C., Clarksville.....	Montgomery	
Reed, T. E., Secy., Lewisburg.....	Marshall		McFall, R. J., Cumberland City.....	Montgomery	

Name	Address	County	Name	Address	County
Neblett, L. L., Stayton.....	Montgomery	Thomison, J. G., Dayton.....	Rhea		
Neblett, S. E., Southside.....	Montgomery	Thomison, W. F., Dayton.....	Rhea		
Nesbitt, H. A., Cunningham.....	Montgomery	Watkins, R. K., Spring City.....	Rhea		
Rumyon, R. J., Pres., Clarksville.....	Montgomery	Yancey, Sam M., Dayton, R. F. D. No. 4.....	Rhea		
Shayden, J. D., Clarksville.....	Montgomery	Clack, J. M., Rockwood.....	Roane		
Vanham, G. L., Clarksville.....	Montgomery	Clack, W. S., Rockwood.....	Roane		
Webb, I. E., Bethlehem.....	Montgomery	Givan, G. C. G., Secy., Harriman.....	Roane		
Webb, Roy, Secy., St. Bethlehem.....	Montgomery	Goodwyn, J. B., Harriman.....	Roane		
Bird, A., Wartburg.....	Morgan	Hill, W. W., Harriman.....	Roane		
Jones, S. H., Secy., Sunbright.....	Morgan	Nelson, J. E., Rockwood.....	Roane		
Todd, G. R., Wartburg.....	Morgan	Phillips, E. S., Rockwood.....	Roane		
Wiltzie, A. S., Pres., Lancing.....	Morgan	Roberts, John, Kingston.....	Roane		
Blanton, M. A., Union City.....	Obion	Sewell, J. A., Rockwood.....	Roane		
Butler, H. T., Union City.....	Obion	Waller, J. J., Oliver Springs.....	Roane		
Capps, J. M., Kenton.....	Obion	Wilson, J. C., Rockwood.....	Roane		
Carlton, J. D., Union City.....	Obion	Williams, W. B., Harriman.....	Roane		
Chandler, S. E., Minnick.....	Obion	Zirkle, G. P., Kingston.....	Roane		
Cunningham, J. P., Elbridge.....	Obion	Brown, T. L. B., White House, R. R. No. 1.....	Robertson		
Darnall, J. E., Pres., Obion.....	Obion	Covington, Jas. J., Cross Plains.....	Robertson		
Glover, H., Troy.....	Obion	Connell, Jas. R., Adams.....	Robertson		
Havner, J. B., Troy.....	Obion	Fyke, Benjamin F., Secy., Springfield.....	Robertson		
Jernigan, V. J., Obion.....	Obion	Frey, J. J., Springfeld, R. R. No. 6.....	Robertson		
Maddox, D. C., Terrell.....	Obion	Green, Jno. R., Springfield.....	Robertson		
Marshall, T. E., Union City.....	Obion	House, Thos. B., Springfield.....	Robertson		
Matlock, P. N., Mason Hall.....	Obion	Jones, Guy R., Orlinda.....	Robertson		
Paschal, J. B., Union City.....	Obion	Johnson, Turner L., Greenbrier.....	Robertson		
Pearce, D. M., Union City.....	Obion	Mathews, Richard L., Springfield.....	Robertson		
Prather, D. J., Secy., Woodland Mills.....	Obion	Moore, Jerome, E., (Honorary), Springfield.....	Robertson		
Prather, P. W., Troy.....	Obion	Porter, William W., Springfield.....	Robertson		
Roberts, W. F., Union City.....	Obion	Reeves, Jno. H., Springfield, R. R. No. 1, Robertson			
Roper, J. E., Obion.....	Obion	Ramer, D. W., Springfield, R. R. No. 3, Robertson			
Sharp, J. B., Union City.....	Obion	Royster, William, Cedar Hill, R. R. No. 5.....	Robertson		
Watson, F. W., Glass.....	Obion	Sary, Bailey B., Cedar Hill.....	Robertson		
Wells, J. J., Rives.....	Obion	Sory, Leander F., Adams.....	Robertson		
White, E. H., Elbridge.....	Obion	Scott, Miles, Pres., Springfield, R. R. No. 9.....	Robertson		
Wright, J. L., Fulton, Ky.....	Obion	Woodruff, Jas. B., Springfield, R. R. No. 8.....	Robertson		
Bertram, J. F., Manson.....	Manson	Walton, L. B., (Honorary), White House, R. R. No. 1.....	Robertson		
Breeding, W. M., Livingston.....	Overton	Woodard, F. M., Springfield.....	Robertson		
Capps, M. B., Livingston.....	Overton	Winters, W. W., Greenbrier.....	Robertson		
Lansden, J. B., Livingston.....	Overton	Bilbro, W. C., Murfreesboro.....	Rutherford		
McDonald, J. T., Monroe.....	Overton	Crosthwait, Geo. W., Florence.....	Rutherford		
Qualls, A. B., Secy., Livingston.....	Overton	Duggan, S. S., Eagleville.....	Rutherford		
Reed, W. A., Livingston.....	Overton	Engles, W. J., Smyrna.....	Rutherford		
Smith, J. E., Pres., Hillman.....	Overton	Huff, D. C., Christiana.....	Rutherford		
Wells, M. H., Hillman.....	Overton	Jones, Enoch H., Murfreesboro.....	Rutherford		
Akin, Elias Marion, Copperhill.....	Polk	Kelton, J. C., Lascassas.....	Rutherford		
Barnes, James Jackson, Copperhill.....	Polk	Murfree, Jas. B., Murfreesboro.....	Rutherford		
Copeland, W. J., Fetzerton.....	Polk	Murfree, M. B., Murfreesboro.....	Rutherford		
Geisler, Francis Oto, Secy., Isabella.....	Polk	Overall, Jas. C., Lascassas.....	Rutherford		
Gillain, William Young, Copperhill.....	Polk	Pitts, Rufus, Murfreesboro.....	Rutherford		
Hyder, Robert Lee, Isabella.....	Polk	Rucker, Jas. J., Murfreesboro.....	Rutherford		
Kinsey, Fred M., Ducktown.....	Polk	Yource, Wm. E., Readyville.....	Rutherford		
Kinsey, Lucius E., Ducktown.....	Polk	Boyatt, F. M., Oneida.....	Scott		
Lewis, Albert W., Pres., Copperhill.....	Polk	Foster, J. L., Huntsville.....	Scott		
Adams, J. O., Pres., Monterey.....	Putnam	Phillips, T. L., Pres., Newland.....	Scott		
Curtis, H. C., Algood.....	Putnam	McGill, T. M., Norma.....	Scott		
Denton, Samuel, Buffalo Valley.....	Putnam	Shields, J. A. P., Secy., Norma.....	Scott		
Dyer, Lex, Secy., Cookeville.....	Putnam	Thompson, M. E., Laxton.....	Scott		
Ensor, L. D. J., Cookeville.....	Putnam	Ayers, J. C., 2158 Union Ave., Memphis.....	Shelby		
Farmer, W. S., Cookeville.....	Putnam	Andrews, J. L., Rogers Bldg., Memphis.....	Shelby		
Howard, W. A., Algood.....	Putnam	Anderson, P. H., Tenn. Trust Bldg., Memphis.....	Shelby		
Moore, J. T., Algood.....	Putnam	Anderson, W. S., Memphis Trust Bldg., Memphis.....	Shelby		
Storris, J. R., Cookeville.....	Putnam	Branch, B. L., Collierville.....	Shelby		
Trapp, J. S., Sparta.....	Putnam	Blackburn, E. C., Randolph Bldg., Memphis.....	Shelby		
White, W. A., Wilder.....	Putnam	Berry, H. L., Randolph Bldg., Memphis.....	Shelby		
Chadwick, P. C., Rhea Springs.....	Rhea	Beaty, H. W., Station C., Memphis.....	Shelby		
Clack, J. M., Spring City.....	Rhea				
Gouldson, Sam, Dayton.....	Rhea				
Gillespie, J. R., Dayton.....	Rhea				
Gross, A. W., Dayton.....	Rhea				
Hammock, J. W., Graysville.....	Rhea				
Lovell, A. L., Graysville.....	Rhea				
McDonald, W. P., Spring City.....	Rhea				
McKenzie, Jas. L., Pres., Graysville.....	Rhea				
Miller, R. C., Secy., Evesville.....	Rhea				

Name	Address	County
Bridger, Jas. D., Memphis Trust Bldg., Memphis		Shelby
Beanchamp, Jesse L., 614 N. 7th St., Memphis		Shelby
Barton, Jas. L., 78 S. Main St., Memphis ..		Shelby
Biggs, J. M., Memphis Trust Bldg., Memphis ..		Shelby
Brinson, S. N., 201 Cooper Ave., Memphis ..		Shelby
Burns, W. B., Porter Bldg., Memphis		Shelby
Black, W. T., Randolph Bldg., Memphis ..		Shelby
Braun, W. F., Memphis Trust Bldg., Memphis		Shelby
Bearden, M. L., 1091 Greenwood, Memphis ..		Shelby
Baldwin, W. H., Station G, Memphis		Shelby
Bell, Jno. C., 534 N. 2nd., Memphis		Shelby
Buford, G. C., Randolph Bldg., Memphis ..		Shelby
Bell, C. A., Lee Bldg., Memphis		Shelby
Beck, C. M., 293 S. 3rd St., Memphis		Shelby
Collier, Casa, Tenn. Trust Bldg., Memphis ..		Shelby
Chaffee, F. R., Lucy		Shelby
Crisler, J. A., Peabody Hotel, Memphis		Shelby
Carter, J. Hugh, Tenn. Trust Bldg., Memphis		Shelby
Cullings, Jesse J., 83 W. Jackson Bldg., Memphis		Shelby
Crutcher, J. R., Tenn. Trust Bldg., Memphis		Shelby
Crofford, T. J., 211 N. 3rd St., Memphis ..		Shelby
Campbell, W. C., Randolph Bldg., Memphis ..		Shelby
Clary, W. F., Memphis Trust Bldg., Memphis		Shelby
Castles, W. A. S., 631-2 N. Main St., Memphis		Shelby
Campbell, S. S., 729 Monroe St., Memphis ..		Shelby
Clark, J. C., Goodwyn Inst., Memphis		Shelby
Cochran, J. F., 579 5th St., Memphis		Shelby
Cunningham, J. W., Randolph Bldg., Memphis		Shelby
Currie, J. A., Lee Bldg., Memphis		Shelby
Dunavant, B. N., Secy., Exchange Bldg., Memphis		Shelby
Duvall, C. E., 218 McLemore St., Memphis ..		Shelby
Duncan, I. G., 422 N. Waldran, Memphis ..		Shelby
DeLoach, A. B., Scimitar Bldg., Memphis ..		Shelby
Ellett, C. E., Randolph Bldg., Memphis		Shelby
Everett, H. B., Station C, Memphis		Shelby
Edwards, C. W., 488 Laclede Ave., Memphis		Shelby
Erskine, Alexander (Vet.), Randolph Bldg., Memphis		Shelby
Fontaine, Bryce W., Byrd Bldg., Memphis ..		Shelby
Francis, E. E., 115 N. Main, Memphis		Shelby
Farris, H. L., Frisco Hosp., St. Louis		Shelby
French, J. E., Silver City, Miss.		Shelby
Flippin, S. J., Brunswick		Shelby
Flaniken, R. B., Rogers Bldg., Memphis ..		Shelby
Fagin, Robt., Tenn. Trust Bldg., Memphis ..		Shelby
Fleumer, O. C., Goodbar Bldg., Memphis ..		Shelby
Farrington, S. M., Memphis Trust Bldg., Memphis		Shelby
Frost, I. N., Station C, Memphis		Shelby
Graham, Frank, Memphis Trust Bldg., Memphis		Shelby
Gray, Jas. N., Arlington		Shelby
Goltman, M., Memphis Trust Bldg., Memphis		Shelby
Hudson, A. G., Raines		Shelby
Henning, B. G., Memphis Trust Bldg., Memphis		Shelby
Ham, E. C., Randolph Bldg., Memphis		Shelby
Havell, W. T., Brunswick		Shelby
Haynes, E. E., Randolph Bldg., Memphis ..		Shelby
Hoover, F. B., Goodwyn Inst., Memphis ..		Shelby
Heming, Max, Memphis Trust Bldg., Memphis		Shelby
Haase, M., Memphis Trust Bldg., Memphis ..		Shelby
Hall, D. M., Memphis Trust Bldg., Memphis ..		Shelby
Henderson, R. G., Randolph Bldg., Memphis ..		Shelby
Holder, E. M., Memphis Trust Bldg., Memphis		Shelby
Hill, J. F., Tenn. Trust Bldg., Memphis ..		Shelby
Holmes, J. B., 1686 Euclid Ave., Memphis ..		Shelby
Jacobs, A. G., Tenn. Trust Bldg., Memphis ..		Shelby
Jones, F. A., Tenn. Trust Bldg., Memphis ..		Shelby
Jones, Heber, Tenn. Trust Bldg., Memphis ..		Shelby
Jelks, Jno. L., Tenn. Trust Bldg., Memphis ..		Shelby
Johnson, J. E., Memphis Trust Bldg., Memphis		Shelby
Jones, Kennedy, Tenn. Trust Bldg., Memphis		Shelby
Jones, Geo. P., 218 McLemore St., Memphis ..		Shelby
Kane, Elizabeth C., Exchange Bldg., Memphis		Shelby
Krauss, Wm., Memphis Trust Bldg., Kincaid, H. B., Memphis Trust Bldg., Memphis		Shelby
Lewis, A. C., Exchange Bldg., Memphis ..		Shelby
Leake, E. K., Collierville		Shelby
Livermore, Geo. R., Tenn. Trust Bldg., Memphis		Shelby
Lipscomb, J. A., 63 N. Main St., Memphis ..		Shelby
Leroy, Louis, Tenn. Trust Bldg., Memphis ..		Shelby
Lawrence, W. S., Memphis Trust Bldg., Memphis		Shelby
Lanhorn, C. C., 700 N. Main St., Memphis ..		Shelby
Meyer, L. L., Memphis Trust Bldg., Memphis		Shelby
Moore, Alfred, Randolph Bldg., Memphis ..		Shelby
McMahon, A. R., Goodwyn Inst., Memphis ..		Shelby
Mitchell, Robt. H., So. Ex. Bldg., Memphis ..		Shelby
Morrow, C. S., Rogers Bldg., Memphis		Shelby
Mitchell, E. D., Randolph Bldg., Memphis ..		Shelby
Malone, F. M., Capleville		Shelby
Minor, Jas. L., Randolph Bldg., Memphis ..		Shelby
Maury, Jno. M., Memphis Trust Bldg., Memphis		Shelby
Moore, Moore, Memphis Trust Bldg., Memphis		Shelby
McCown, O. S., Memphis Trust Bldg., Memphis		Shelby
Mann, Robt., Goodwyn Inst., Memphis		Shelby
Mason, R. F., Randolph Bldg., Memphis ..		Shelby
Malone, Battle, Pres., Rodgers Bldg., Memphis, Tenn.		Shelby
Meeker, Sidney, 1609 Lamar, Memphis		Shelby
Michie, W. T., Scimitar Bldg., Memphis ..		Shelby
Maury, R. B., Memphis Trust Bldg., Memphis		Shelby
Malone, G. B., Memphis Trust Bldg., Memphis		Shelby
McElroy, J. B., Porter Bldg., Memphis		Shelby
McKinney, Richmond, Memphis Trust Bldg., Memphis		Shelby
Mitchell, E. C., Goodwyn Inst., Memphis ..		Shelby
Mitchell, W. W., Memphis		Shelby
Oliver, A. B., Tenn. Trust Bldg., Memphis ..		Shelby
Owens, Jas. P., 218 McLemore St., Memphis ..		Shelby
Porter, A. R., Randolph Bldg., Memphis ..		Shelby
Petty, G. E., 958 S. 4th St., Memphis		Shelby
Pendergrast, L. H., Memphis Trust Bldg., Memphis		Shelby
Price, J. W., Memphis Trust Bldg., Memphis ..		Shelby
Perkins, P. A., Memphis Trust Bldg., Memphis		Shelby
Pride, W. T., Memphis Trust Bldg., Memphis		Shelby
Posert, Henry, So. Express Bldg., Memphis		Shelby
Pistole, W. H., Station G, Memphis		Shelby
Ragsdale, W. E., 218 McLemore St., Memphis		Shelby
Raines, W. F., Johnson Bldg., Memphis		Shelby

Name	Address	County	Name	Address	County
Rudisill, A. W., 1017 Patton, Memphis....		Shelby	Woodson, L. M., Gallatin.....		Sumner
Rogers, W. B., Rogers Bldg., Memphis....		Shelby	Wright, T. E., Bethpage.....		Sumner
Rosamond, Eugene, Byrd Bldg., Memphis....		Shelby	Burger, Thos. O., Secy., McMinnville....		Warren
Rucker, S. T., 935 Raleigh Memphis.....		Shelby	Cantrell, Q. C., Pres., McMinnville.....		Warren
Sinclair, A. G., So. Express Bldg., Memphis, Shelby			Copenhaver, H. V., Rock Island.....		Warren
Summers, C. K., Exchange Bldg., Memphis, Shelby			Cummings, V. B., (Vet.), Rowland.....		Warren
Sauls, D. K., 171 S. Main St., Memphis....		Shelby	Farrar, H. C., Hillsboro.....		Warren
Smythe, F. D., Porter Bldg., Memphis....		Shelby	Fisher, G. C., Dibrell.....		Warren
Stanley, J., Byrum, Randolph Bldg.,			Mooneyham, E. L., Rock Island.....		Warren
Memphis		Shelby	Northcutt, E. E., McMinnville.....		Warren
Schultz, M. A., 40 W. Iowa Ave., Memphis, Shelby			Ramsey, A. B., McMinnville.....		Warren
Sibley, S. J., 752 McLennore, Memphis....		Shelby	Reynolds, Herman, Viola		Warren
Smith, W. H., 1306 Latham, Memphis....		Shelby	Seitz, Albert, McMinnville.....		Warren
Somerville, W. G., Central Bank, Memphis..		Shelby	Trail, A. J., McMinnville.....		Warren
Simpson, W. L., Randolph Bldg., Memphis..		Shelby	Akers, R. M., Laurel Bloomery.....		Washington
Turner, B. F., Odd Fellows Bldg., Memphis, Shelby			Arnold, J. F., Limestone.....		Washington
Thornton, G. B., (Vet.), 150 Court Ave.,			Broyles, C. J., Johnson City.....		Washington
Memphis		Shelby	Cox, J. W., Secy., Johnson City.....		Washington
Thomas, J. P., Tenn. Trust Bldg., Memphis, Shelby			Carroll, C. T., Johnson City.....		Washington
Toombs, P. W., Tenn. Trust Bldg., Memphis, Shelby			Dulauey, W. R., Jonesboro.....		Washington
Thorn, S. W., 892 Louisiana Ave., Memphis, Shelby			Jones, J. H., Garbers.....		Washington
Taylor, Neemon, 964 New York Ave.,			Kennedy, W. T., Johnson City.....		Washington
Memphis		Shelby	Long, E. A., Johnson City.....		Washington
Taylor, W. W., Randolph Bldg., Memphis..		Shelby	Lewis, A. L., Laurel Bloomery.....		Washington
Terrell, S. D., 201 S. Cooper, Memphis....		Shelby	Matthews, W. J., Johnson City.....		Washington
Underwood, Robt. B., 325 Carroll St.,			Miller, H. D., Johnson City.....		Washington
Memphis		Shelby	Panhorst, M. H., Jonesboro.....		Washington
Vaughan, J. A., Goodwyn Inst., Memphis..		Shelby	Randall, J. P., Johnson City.....		Washington
Van Horn, J. A., 78 N. Main St., Memphis..		Shelby	Sells, G. J., Johnson City.....		Washington
Venn, J. H., Scimitar Bldg., Memphis....		Shelby	Smith, C. E., Johnson City.....		Washington
Williams, A. B., Randolph Bldg., Memphis..		Shelby	Trigg, Daniel, Johnson City.....		Washington
White, C. A., Tenn. Trust Bldg., Memphis..		Shelby	West, E. T., Johnson City.....		Washington
Watkins, E. D., Memphis Trust Bldg.,			Wallace, J. W., Watauga.....		Washington
Memphis		Shelby	Baker, R. F., Sparta.....		White
Watkins, H. C., Lee Bldg., Memphis....		Shelby	Breding, W. J., Ravenscroft.....		White
Wolff, H. S., So. Express Bldg., Memphis..		Shelby	Bradley, A. A., Eastland.....		White
Wadley, S. L., Randolph Bldg., Memphis....		Shelby	Brock, W. L., Sparta.....		White
Wadlington, W. J., Randolph Bldg.,			Cantrell, W. B., Pres., Cassville.....		White
Memphis		Shelby	Cotton, L. D., Sparta.....		White
Webb, W. S., 521 S. Front St., Memphis....		Shelby	Earles, P. H., Sparta.....		White
Wallace, W. R., 958 So. 4th St., Memphis....		Shelby	Gaines, S. E., Sparta.....		White
Williamson, W. L., Goodwyn Inst., Memphis, Shelby			Goff, J. R., Clifty.....		White
Walton, J. M., 901 N. 3rd St., Memphis....		Shelby	Gist, D. R., Sparta.....		White
White, R. L., 2109 Harbert, Memphis....		Shelby	Johnson, W. M., Bon Air.....		White
West, H. A., Memphis.....		Shelby	Lewis, P. K., Doyle.....		White
Winston, A. L., Elamogordo, N. M.....		Shelby	Lewis, V. L., Crossville.....		White
Alexander, M. N., Pleasant Shade.....		Smith	Mason, E. C., Ravenscroft.....		White
Bensley, J. J., Pleasant Shade.....		Smith	Richards, A. F., Secy., Sparta.....		White
Bensley, Isham, Dickson Springs.....		Smith	Smith, R. E. L., Doyle.....		White
Bridges, J. G., New Middleton.....		Smith	Young, W. B., Clifty.....		White
Campbell, J. S., Gordonville		Smith	Cochran, H. P., Franklin.....		Williamson
Chism, J. H., Carthage.....		Smith	German, Dan, Jr., Franklin.....		Williamson
Donoho, C. H., Duffield.....		Smith	Graham, W. W., Arno.....		Williamson
Hugh, B. J., Secy., Elmwood.....		Smith	Greer, J. W., Thompson Station.....		Williamson
Hargis, F. C., Chestnut Mound.....		Smith	Howlett, K. S., Secy., Franklin.....		Williamson
Key, R. E., Pres., Monoville.....		Smith	Nolen, B. F., Franklin.....		Williamson
King, R. W., Gordonsville.....		Smith	Oden, S. F., Brentwood.....		Williamson
Robins, C. D., Gordonsville.....		Smith	Paschal, G. C., Arrington.....		Williamson
Swope, Frank, Carthage.....		Smith	Shannon, J. O., Pres., Franklin.....		Williamson
Parker, R. T., Dixon Springs.....		Smith	White, S. W., Franklin.....		Williamson
White, J. A., Carthage.....		Smith	Bratton, Thos. O., Pres., Lebanon.....		Wilson
Allen, W. T., Pres., Gallatin.....		Sumner	Bone, James R., Secy., Lebanon.....		Wilson
Dorris, W. B., Gallatin.....		Sumner	Davis, J. L., Watertown.....		Wilson
Dotson, W. S., Secy., Gallatin.....		Sumner	Eskew, A. O., Lebanon.....		Wilson
Dunklin, F. H., Gallatin.....		Sumner	Edgerton, H. K., Lebanon.....		Wilson
Gallbreath, B. S., Hendersonville.....		Sumner	Lillard, R. Q., Lebanon.....		Wilson
Lackey, W. N., Gallatin.....		Sumner	McFarland, J. J., Lebanon.....		Wilson
Parker, Jno. R., Gallatin.....		Sumner	Oldham, D. P., Mt. Juliet.....		Wilson
Peeden, E. F., Portland		Sumner	Rhea, B. S., Lebanon.....		Wilson
Reece, Homer, Gallatin.....		Sumner	Tilley, L. L., Lebanon.....		Wilson
			Weaver, J. M., Mt. Juliet.....		Wilson
			Young, C. V., Lebanon.....		Wilson

MINUTES OF CHATTANOOGA ACADEMY OF MEDICINE AND HAMILTON COUNTY MEDICAL SOCIETY.

Six hundred and forty-ninth regular meeting held May 5, 1911, at 8 p. m.

President James H. Atlee presided.

Roll of members was called, forty-two being present. Three visiting physicians were also present.

Minutes of the last regular meeting were read and approved.

The Secretary announced the death on May 4, of Dr. Wm. A. Duncan, a member of the Society and its President during 1910. A committee of eight was appointed by the President to draft resolutions of respect. The committee follows: Drs. T. E. Abernathy, J. B. Steele, J. S. Woolyard, G. P. Haymore, W. A. Dietrich, H. P. Larimore, C. Holtzclaw and H. Berlin. The Secretary announced the plans for the funeral and the purchase of a red-cross floral emblem as the Society's token of sympathy.

Application for membership in the Society was read from Dr. Bayard Sullivan and referred to the Board of Censors.

A case of death from illuminating gas was reported by Dr. J. J. Gee. Discussed by Dr. E. B. Anderson.

Dr. Michael Hoke, the well-known orthopaedic surgeon of Atlanta, Ga., delivered a most interesting and instructive address on "The Operative Treatment of Relapsed and Untreated Club-Foot." This was illustrated by numerous charts, photographs and radiographs and the subject further demonstrated with the articulated bones of the parts under discussion. Dr. Hoke showed beyond peradventure his entire familiarity with the subject and demonstrated the most perfect results from radical bone surgery in the worst class of cases. The subject was discussed by Drs. E. B. Anderson, E. D. Newell and C. Holtzclaw and, in closing, by Dr. Hoke.

The Secretary announced that the next meeting to be held May 12, would be a memorial meeting in memory of Dr. Wm. A. Duncan.

The Society adjourned.

H. P. LARIMORE,
Secretary.

CHATTANOOGA ACADEMY OF MEDICINE AND HAMILTON COUNTY MEDICAL SOCIETY.

SECRETARY'S REPORT FOR 1910.

December 28, 1910.

Mr. President and Members of the Society: Your Secretary's report for the year 1910 is hereby submitted:

MEMBERSHIP.

We began the year 1910 with 107 members and close with 112 members, a net increase of five. There were eleven new members elected, namely: Drs. R. M. Colmore, city; James Partridge, city; J. C. Brooks, city; J. Hamilton Taylor, city; John D. Calhoun, city; Robert M. Richardson, city; Reuben N. Lee, city; Thomas L. James, Orme, Tenn.; L. T. Stem, East Lake, Tenn., and R. P. Bell and W. E. Lindsay.

Three of our members transferred their membership to other county societies, namely: Drs. M. Hardin Stuart, Robt. M. Richardson and C. T. Carroll, Jr.

Two have been dropped for non-payment of dues, namely, Drs. R. R. Cornell, city, and J. M. Webb, of Ooltewah, Tenn.

There has been one death, that of Dr. William L. Nolen.

Therefore, as stated, we close this good year 1910 with a membership numbering 112.

This continues to be the largest Society in the state, we easily out-numbering the Knoxville society. While we can be justly proud of our large society, yet it can be made larger, for there are still eligible physicians on the outside who should affiliate. The efforts of this society's officers and membership should be continued to secure their affiliation.

ATTENDANCE.

During 1910, fifty-two regular meetings were held with a total attendance of 1,527 members. No called meetings have been held. The average attendance for the 52 meetings has been 29 1-3. This is our first experience with weekly meetings and we feel that the society is to be congratulated upon such splendid attendance. The

smallest number of members at any one meeting has been thirteen, the largest sixty-one.

During the year we have had a total of eighty-six non-affiliated and visiting doctors attend our meetings.

Only two of the entire membership but were absent five or more meetings, namely, Dr. Jas. H. Atlee and H. P. Larimore. The former was absent for one meeting, being in Rochester, Minn.,—the latter, your Secretary, missing two meetings, on both occasions being out of the city.

SCIENTIFIC PROGRAM.

There were 118 subjects on the 1910 program—an immense mass of material—subjects embracing almost every known medical and surgical topic—a veritable twelve of general post-graduate work. Of these 118 subjects, eighty-seven were filled—in some instances the printed title being changed. The greater number of these essays and addresses were most splendid efforts and were very interesting and timely. All have been learnedly discussed. There have been no out-of-town physicians on the program this year. A greater number of our local men have contributed to the medical journals than any previous year—a good indication indeed. More deserved space in the journals, but were not type written or put in proper form to publish. We would again urge upon our members to so prepare their papers that the medical journals can use them—they are always anxious to secure the best of Southern medical thought. This attracts attention not only to the writer, but to our society and the city of Chattanooga as a medical center.

When the Program Committee is named for 1911 make any suggestions to them that you think will be useful, but do it early.

Many interesting cases have been reported and exhibited; all have been appreciated and conducive to valuable discussion.

SOCIAL FEATURES.

The annual dinner of the society held at the Hotel Patten on January 14, was largely attended and proved a most enjoyable occasion. The popular price of \$1.00 per

plate was paid by each member attending, and extra expenses totaling only \$6.87 were met out of the society's treasury.

Vice President James H. Atlee on April 29, tendered a reception in honor of Dr. Berlin's return to the city—a delightful occasion, indeed.

Our annual inspection tours of the Sprague Dairy and Hill Dairy were in each instance followed by royal repasts and greatly appreciated by the membership.

LIST OF NURSES.

Our list of nurses has undergone two revisions during 1910. Five hundred were distributed in January, and 700, the fourth edition, were sent out in July, at which later time a revised list of members was also distributed. These lists of nurses are eagerly sought for and evidently fill a long-felt want.

COLLECTION OF DUES.

The Treasurer continues to have his troubles with collections. Of our 112 members, sixteen owe for dues—in other words, are not in good standing. The State Society's pro rata is promptly sent to the State Treasurer, six remittances having been made during the year, totaling \$202. No dues are charged two members, namely: Drs. Sims and R. N. Taylor, and their State Society dues as well are paid by the society.

1911.

Let us all unite to make the new year, 1911, the best in the history of the society. Let "Harmony" be the watchword—for with harmony present all else will progress satisfactorily. Harmony we must have for a successful year's work. Come to these meetings and get acquainted with your brother doctor and take part in the discussions.

We start the new year with a new name—"The Chattanooga Academy of Medicine and Hamilton County Medical Society." This euphonious title—the invention of Dr. Yarnell—this new dress as it were—may it not "hobble" our progress, but make us take "longer strides" and prove worthy of the name. We will soon be comfortably located in the new bank building with the Cham-

ber of Commerce. We can then point with pride to our meeting place. It will be commodious, elegantly furnished, convenient, above the noise and well ventilated.

Respectfully submitted,

H. P. LARIMORE,
Secretary.

GREENE COUNTY.

The Greene County Medical Society met in the office of Dr. Woodyard May 1, and was called to order by the President, Dr. J. B. Bell.

After a number of minor discussions, the program was taken up as follows:

"Clinical Cases," by Dr. I. B. Brown, Moshem; "A Clinic," by Dr. J. S. J. Wilhoit, Afton; "Calcium Sulphide," by Dr. M. A. Blanton, Baileyton; "Discussions," by the society.

After the program was completed, the society adjourned to meet on the first Monday in August in the office of Drs. Fox and Taylor.

BEDFORD COUNTY

Dr. F. B. Reagor, of Shelbyville, Secretary of the Bedford County Society, has issued the following call to the doctors of Bedford County.

Dear Doctor:

You are afflicted with a delinquent list among your clientele which is large enough to be of considerable burden, making profitless drafts upon your time and continually depleting your finances.

Careful investigation has shown that physicians generally sustain a loss from this cause of from twenty-five to fifty per cent. of their earnings.

This means a loss to you of a competency for yourself and family, and is a condition of affairs that is a sad commentary on the business capacity of the profession, and reflects painfully upon its very integrity in the business world. This explains why twenty per cent. of the entire professional body of the United States occurs in commercial rating on the dead beat list. So vital a defect ought to be remedied, especially where such a remedy is not only possible, but highly practicable.

To this end the physicians of Bedford County are forming a protective association, and as an essential to its highest efficiency, the co-operation of every doctor within the county is desirable, and as this is a matter that so vitally affects you, doctor, we are writing you to urgently solicit your colaboration with us, which can only be given by active membership in this organization. This organization is one for the betterment of the entire profession of the county and bears no relation to the Bedford County Medical Society.

Come and join us and let us help you solve the most vexing problem that confronts you and your family.

The meeting will be held May 10 in the hall over the postoffice, at 1:30 p. m.

Respectfully,
COMMITTEE.

NOTICE.

Members of this Society and others who may have had personal experience in the Operative Treatment of Aneurism by the intra-saccular method of suture. (Endoaurismorrhaphy, also known as the "Matas Operation") will confer a favor by notifying the Secretary, or by communicating their experience directly to Dr. R. Matas, 2255 St. Charles Avenue, New Orleans, Louisiana.

BOOKS RECEIVED.

GONORRHEA IN THE MALE. A Practical Guide to its Treatment by Abr. L. Wolbarst, M. D. Professor of Genito-urinary diseases, New York School of Clinical Medicine, Published by the International Journal of Surgery Co., New York.

PLASTER OF PARIS AND HOW TO USE IT. By Martin W. Ware, M. D., New York, Adjunct Attending Surgeon, Mount Sinai Hospital; Surgeon to the Good Samaritan Dispensary; Instructor of Surgery in the New York Post Graduate School. Second edition revised and enlarged. Price, cloth, square form, \$1.25. De Luxe leather, \$2.50. Surgery Publishing Co., New York.

REPORT FROM PATHOLOGICAL DEPARTMENT. Central Indiana Hospital for Insane. Compiled by Geo. F. Edenharter, M. D., Superintendent. Vols. II and III. Published by the Central Indiana Hospital for Insane.

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DEVOTED TO THE INTERESTS OF THE MEDICAL PROFESSION OF TENNESSEE

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PERRY BROMBERG, M. D., Editor and Sec'y

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VOLUME IV

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NUMBER 2

SOME REMARKS UPON CANCER WITH ESPECIAL REFERENCE TO CAN- CER OF THE BREAST.*

BY H. M. TIGERT, M. D.

General Considerations.—There is no single malady to which human flesh is heir so universally accorded the center of surgical and medical limelight as malignant disease in its various manifestations. Its very great frequency, attacking all the tissues of the human body, associated with a fearful mortality, justly entitle it to this leading role. Its causation is still wrapped in a shroud of mystery, and the perfection of the microscope for histologic work, about 1830, (microscope invented by Jansen, 1620) did little to clear up this etiological enigma. Since an understanding of the cause of disease is more or less essential to its prevention and cure, little progress has been made in the cure of cancer. Hippocrates' famous maxim, pronounced some several hundred years before Christ, (430-361): "What the drug fails to cure, that the iron (or knife) cures; what the iron cures not, that the fire cures; what the fire fails to cure, this must be called incurable," still holds good to a certain extent in regard to this disease.

History and Theory as to Cause.—To Hunter (1728-1793) is attributed the honor of first studying the minute structure of tumors. He enunciated the belief that tumors were modified normal tissues, but the profession of his day gave little heed to

his teachings, and for the most part adhered to the teachings of Broussais, who regarded all tumors as forms of chronic inflammation. In 1838 Muller published the first work upon cancer based upon histologic examination, and it is from this date that all modern ideas as to its causes spring. Then, as now, the profession was divided between the microbic theory and the cellular derivative theory. In 1858 Virchow announced his views as to the causation of tumors in the now famous aphorism, "Omnis cellula e cellula," upon which Cohnheim based his theory of perverted embryonal cell activity. Virchow also called attention to the frequency of lip cancer in pipe smokers, cancer of the scrotum in chimney sweeps, and the association of cancer of the gall-bladder with gall-stones. More recently many observers have called attention to a possible connection between gastric ulcer and the cancer of the stomach. There is no doubt that frequent exposure of the same part of the body to X-rays has resulted in cancer, all of which goes to prove that chronic irritation tends in some way to excite excessive cell proliferation which may take on a malignant type. Ribbert's theory as to the origin of cancer, viz: that the underlying connective tissue loses its tension and thereby allows abnormal epithelial cell proliferation, while ingenious is not satisfactory, inasmuch as all cases of cancer do not conform to the general rule. Turning from the autogenous causes of cancer, we find that from time to time numerous workers

*Read before the Tennessee State Medical Society April 13, 1911.

in the cancer field have brought forth various bacteria as the etiological cause, but these have in turn "been weighed in the balance and found wanting." (Under this head come the yeast organisms of San Felice and the protozoa of Thoma and others.) The arguments of those contending for the infection theory are based upon the following points: (1) the theory of the contagiousness or infectiousness of malignant tumors in mice, based upon the supposed parasitic origin of the disease; (2) the transmissibility of the Jensen mouse tumor; (3) inoculation experiments; (4) the reports of cases in human beings of co-existent or coincident cancer, supposedly the result of accidental infection.

It is not within the scope of this paper to enter into the merits of the arguments advanced by the contending factions upon this subject. From the most cursory glance at this phase of cancer, it is sufficient to establish the fact that so far the cause of cancer is obscured in a maze of doubt and uncertainty. Suffice it to say that in all probability, when we discover the cause of life, we may find an answer to this riddle. In other words, what is it that causes any cell to divide and multiply?

Frequency of Cancer.—K. I. Sanes, of Pittsburg, Pa., has a most elaborate statistical study of cancer, reported in the November number of the American Journal of Obstetrics and Diseases of Women and Children. His table is based upon the U. S. Bureau of Census, covering a period of eight years, from 1900 to 1908, and upon the tabulated reports of 219 hospitals in this country and Canada. From a study of these statistics we learn that the proportion of deaths from cancer to the total number of deaths from all causes are:

In females 1 to 17.7
In males 1 to 33.4

The proportion of deaths from cancer for the past thirty-five years are:

In females 1 to 9.8
In males 1 to 18.5

Taking the relative frequency of cancer in both sexes, we find that according to the

mortality statistics of the U. S. Bureau of Census, 62 per cent of those that die of cancer are females and 38 per cent males; according to hospital statistics, 66.5 per cent are females and 35.5 per cent are males. In other words, cancer is about twice as common in females as in males. Unfortunately cancer is on the increase. This same table shows that during the eight years mentioned, the death rate has increased from 63 per cent per 100,000 population to 74.3.

Cancer is undoubtedly also becoming more common in the young. In England there are now four times as many deaths from cancer as there were fifty years ago.

In regard to cancer of the breast, Sanes' table shows an increase of from 1 in 1,815 to 1 in 1,199 during the eight years mentioned.

Classification and General Remarks.—Cancer of the breast constitutes one-third of all cancers seen in hospitals and private work.

In discussing carcinoma of the breast, I do not feel it to be necessary for the purposes of this paper to go into an elaborate classification and sub-classification of malignant tumors of the breast, notwithstanding the fact that I fully appreciate the importance of a thorough macroscopic and microscopic knowledge of tumors to the surgeon. It is sufficient for the purposes of this paper to say that, in a general way, cancer of the breast appears in four chief forms: Adeno-carcinoma, medullary-carcinoma, scirrhus and cancer cysts. Of these various forms, the first constitute about 14 per cent; the second about 23 per cent; the scirrhus about 70 per cent, while cancer cysts are comparatively infrequent, constituting only about 3 per cent. Clinical work points to the fact that 90 per cent of all lumps in the breasts of women past the age of thirty are either malignant or will become so, and that thirteen out of fourteen tumors in the breasts of women past forty are malignant. If we could get these facts impressed upon us with an abiding faith, and in conjunction with them the importance of early and radical operation, many valuable lives might be saved and many

years added to the existence of these poor unfortunates. Upon this point Handley makes this observation: "But, alas! Faith has many degrees; there is all the difference in the world between languid assent of the frontal lobes and the living conviction which resides somewhere near the motor centres, close to the springs of action." Until the latter form of faith is acquired, with our present knowledge of cancer, little can be hoped for. Early recognition and radical, and immediate, operation is the *sine qui non* of success in the treatment of these cases.

Predisposing Causes to Cancer of the Breast.—In women there is a physiological process of evolution and involution which normally takes place in the breast in correspondence with certain sexual crises in their lives, viz: puberty, menstruation, pregnancy, lactation and the menopause. These physiological tides of tissue change, especially if augmented by bacterial invasion or obstruction of the ducts, certainly must act as predisposing causes to malignant formation. The tissue changes referred to are more marked in the married than in the unmarried—and it is also true that cancer more frequently attacks the breasts of the married than the unmarried. Clinically, from 10 per cent to 15 per cent of all cases of cancer of the breast give a history of past chronic mastitis, and when the microscope is resorted to it is found that the percentage runs much higher. Beadles, of the Brompton Cancer Hospital, examined the non-cancerous portions from 100 cancerous breasts and found, without exception, such abnormal changes as undue proliferation of the acini and of the stroma, and cysts were of frequent occurrence. Victor Bonney also found evidences of chronic mastitis in all mammae removed for early carcinoma which he had the opportunity of examining. Predisposition by inherited tendency undoubtedly plays a part. There is a history of trauma in one-third of the cases.

Symptoms and Diagnosis.—In studying the symptoms and diagnosis of cancer of the breast, we should bear in mind that the diagnostic signs taught a few years ago

are really the signs of its complications, and that to wait for the development of such signs as immobility, retraction of the nipple, glandular involvement, etc., is but to rob the patient of most, if not all, hope. While it will no doubt be regarded as radical by some, yet I venture to say that the early diagnosis of cancer of the breast rests upon the symptoms and signs of tumor alone, and that the management must be determined by the microscope. In other words, let us give the patient the benefit of any doubt and regard every tumor of the breast as malignant until proven otherwise. Maurice Richardson says upon this point: "The only safe treatment of breast tumors of all kinds, at all ages, is excision; for excision is the only treatment which will obviate the awful tragedies of overlooked malignancy." It will occasionally happen that a very few cases will come under observation because of pain and discomfort before any tumor can be felt. Such cases will, of course, tax the diagnostic skill and ingenuity of the surgeon, and many such cases will be overlooked until more fully developed. From this it is not to be inferred that pain is an early symptom of breast cancer, for such is not the case. In speaking of this class of cases, Richardson says that he only gives great weight to pain when he can eliminate positively the existence of tumor, when the breast is large, and when there is an indefinable something in it. He is strongly influenced when there is a marked family history of cancer; when a localized area is unduly tender, and always when the axillary lymph nodes are perceptible. Rodman states that the three most important things to consider when a tumor of the breast is under consideration are: (1) Age of the patient; (2) location of the growth; (3) whether or not it is adherent to the surrounding parts. In regard to age, the greatest liability is near and after the menopause, when the gland is taking on functional inactivity and the epithelial cells have a tendency to abnormal proliferation, but we must bear in mind that cancer is becoming more and more frequent in the young, and that it not infrequently is seen at the age of thirty, while not a few have been

observed before the age of thirty. Rodman, in speaking of the site of the growth, says: "While cancer may, and does at times, affect all parts of the breast, it is more frequently found in the axillary hemisphere than in the sternal half of the gland; and of the two outer quadrants, the upper is more frequently involved than the lower. Next in point of frequency the middle portion of the gland—that directly behind the areola—will be involved. It is the latter variety of tumors that by their adhesions to neighboring structures pull on and cause retraction of the nipple. Benign tumors and sarcoma, per contra, are both more frequently met in the sternal hemisphere, the upper and inner quadrant particularly."

Immobility of the tumor is one of the strongest diagnostic signs of cancer, especially if it be associated with wrinkling of the skin and traction upon the nipple, which occurs in about one-half the cases.

The history of predisposing conditions, such as trauma and inherited tendency, are of confirmatory value only. In obscure cases the diagnosis should rest upon the microscopical examination of frozen sections at the time of operation, and the operative treatment governed accordingly.

Complications.—The one most serious complication of cancer and the only one I wish to discuss is metastasis. Superficial cancer seldom kills locally, but nearly always by invasion of other tissue more or less remotely situated. This extension is almost universally through the lymphatic system.

There are six avenues of lymphatic distribution in the breast: (1) Axilla; (2) around the clavicle and into the cervical region; (3) the lymphatics that accompany the intercostal vessels leading to the anterior thoracic lymphatic glands; (4) the lymphatics that follow the intercostal muscles into the posterior thoracic glands; it is obvious that where the tumor is fixed to the thoracic wall, this chain of lymphatics and glands at once become a most serious menace; (5) across to the other breast; (6) along the epigastric fascia into the abdomen. It is interesting to note that metastases into the abdomen are much more frequent than at first believed.

The importance of glandular involvement is forcibly brought out by a study of Halstead's work at the John Hopkins' Hospital. Ruling out all totally inadequate operations, of 89 cases of cancer of the breast, 43 per cent remained cured after a period of three years; of 110 cases of axillary involvement, 25 per cent remained cured at the end of three years; while 101 cases with cervical gland involvement only yielded a cure of 7 per cent after the same period of time.

In general the following complications usually contra-indicate operation:

(1) Fixation of chest wall.

(2) Involvement of axilla where the tissues are so matted together as to baffle complete removal of all diseased structure in that locality.

(3) Enlargement of secondary groups of supra clavicular glands.

(4) Extensive skin changes.

(5) Suppuration.

Before leaving this phase of the subject, I would call attention to the fact that all glandular enlargement is not to be considered as necessarily cancerous, since a certain amount of inflammatory reaction may accompany or precede the malignant extension.

Prognosis.—Child says: "It is the positive cases which are cured that prove cancer curable. The negative cases in which it returns prove nothing with regard to its curability." The prognosis in breast cancer depends upon so many factors that it will be impossible to discuss them fully in a paper of this length. Suffice it to say that the two cardinal factors entering into a favorable outlook are: (1) Early diagnosis; (2) immediate and radical removal of all diseased tissue. The statistics collected by Sanes show about one-third of permanent cures.

Treatment.—There is but one treatment of cancer of the breast when undertaken early, viz: operation. The use of X-rays, toxins, yeasts, radium, ferments or any method of treatment other than operation in operable cases is, to my mind, little short of criminal. Some of the above-mentioned treatments may serve as valuable adjuncts, to surgery especially, X-rays, but for the

present they should not be regarded any more seriously. There is no other surgical condition into which the personal equation of the surgeon enters so fully as into cancer surgery. First, into the proper selection of cases; second, the completeness of the operation carried out. The technique of operations for cancer of the breast, being of surgical interest only, will not be taken up at this time. For those poor unfortunates who are beyond surgical aid, X-rays and morphia offer the greatest palliation.

In conclusion, allow me to say that if these remarks serve to impress a little more forcibly the very great seriousness of tumor in the breast and the necessity for immediate and thorough investigation of the same, they have accomplished all for which they were intended.

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DISCUSSION.

Dr. Deering J. Roberts, Nashville—"From the standpoint of a general practitioner who has been looking practically at the subject of cancer for fifty years, this matter has been very close to me in all this time. I wish

to endorse heartily the method of treatment that Dr. Tigert has suggested, namely, the knife, and the knife alone, as curative. A few words in regard to the causation or its etiology. The cellular theory of Virchow, *omne cellula e cellulo*, did look very well and stood out clearly in his day and was accepted by many great master minds; but the later developments have come on, even before he passed from the stage, in regard to the germ theory of disease, although as yet we have not been able to find the germ of cancer; and yet the more we see of it today, the more we study it, the more I am convinced and satisfied that the day will come when the germ of cancer will be stained and observed just as is the case with the tubercle bacillus or the bacilli of malaria, diphtheria, etc. When Koch and Pasteur brought to light the true causation of tuberculosis, and Laveran that of malaria, we then reasoned by analogy that there were other diseases than those, attributable formerly to other causes, which we now know are due to some similar etiological condition. There are two points in the history of cancer which have been alluded to here, one of them that refers to sarcoma, but I shall not take time in considering that phase of the subject, but there are striking arguments in behalf of the true infectious theory of cancer. We know from observation that there is such a thing as "cancer houses"; that cancer has existed in certain families, and that years afterwards another family has moved there, and cancer has developed. That has not been only a recent observation. We know that tuberculosis has followed families. We used to say that this disease was inherited, but now we do not think so; but when the individual has a certain conformation of the chest, a certain configuration of the body, inherited from his ancestors, it perhaps renders him more liable to the disease; and so it is with the hereditary transmission of cancer. It is, in my opinion, an infection. It follows or remains or is retained in certain houses. It is more prevalent in some localities than in others. Another point alluded to by Dr. Tigert is the greater frequency of cancer developing in the female breast, and a still greater frequency in the breast of a woman who has nursed children. The repeated exposure of the nipple glands, the moistened secretion of the mouth of the child, the bruising and irritation by the child's gums or teeth, the engorged condition of the blood vessels, make this a very good nidus or site for the invasion of the germs. But these germs, I will admit, have not been discovered yet. It is, however, only recently that the spirochete pallida has been brought before the medical profession. Years before it was discovered we knew it was there; the same may be said of the gonococcus; and so it is with, or will yet be demonstrated as to, cancer; and as one of the older members of the profession here present, I wish to place myself on record with these two observations, namely, that cancer is an infection, and that it is curable by the knife, if at all."

Dr. L. E. Burch, Nashville—"I feel a little embarrassed in discussing Dr. Tigert's paper. I was

not here at the time he read it, and for that reason I am not acquainted with the exact line of thought he took up. I have, however, some rather decided views with reference to cancer. I think really it is the most important subject that is before the medical profession today. We hear a great deal about tuberculosis and opium habit and whiskey habit, and yet when we realize that one woman out of every eight, when she reaches the age of thirty five, dies of cancer, it is time that the medical profession was giving it the attention that it deserves. According to the statistics of the United Kingdom, one woman out of every twelve in the year 1908 died of cancer, and in the state of New Jersey last year more people died from cancer than from tuberculosis. In 40 per cent of the cancers, according to my recollection, the disease involved the genital organs, either the breast or uterus, and we all know that the only way to make a radical cure of this condition is to make an early diagnosis. Now, I want to take this stand most emphatically, that every tumor of the breast in a woman above the age of thirty-five should be removed and examined. It is a waste of time, it is really malpractice to attempt any other treatment. I have great respect for radium; I have great respect for the use of the X-ray, but when you attempt to treat a tumor of the breast, cancer of the breast, with the X-ray or radium, you might as well put on so much vaselin. You are absolutely wasting time. There are no positive signs of cancer of the breast. If you wait for retraction of the nipple, or dimpling of the skin, or if you are going to wait for involvement of the axillary glands, you will wait too long, and the time to make the diagnosis is to make it early. If you find a lump there, it makes no difference whether the other symptoms are present or not, the tumor should be removed. It is best to have a pathologist present in the operating room, let him make a frozen section at once and report, and then if the case is found malignant, radical operation should be performed. In regard to the operation, I have nothing to suggest in any way. All of us have our own ideas regarding operation. Of course, it is necessary to make thorough removal not only of the breast, but of the pectoralis major and minor, and then make a dissecting arm removal of the axillary contents. During a visit last week to some of the various clinics I noticed something I believe which is of some value, and that is the removal of the contents at the apex of the axilla. You all know, those of you who have done that operation, what a hole it is up in there and how difficult it is to remove the contents at that point. I noticed one of the operators, however, after he had severed the pectoralis minor muscle, he put on a pair of clamp forceps and made traction upon them, and that pulled the apex of the cancer in easy reach, and then it is comparatively easy to remove the contents at the apex without any injury to the vessels."

Dr. Battle Malone, Memphis—"I think we are greatly indebted to Dr. Tigert for his exceedingly ex-

haustive review of this interesting subject. I would like to discuss the paper from one or two points. First, as to the etiology of cancer. Of course, we all know that for a number of years there has been a great diversity of opinion as to the causative factor. Dr. Roberts would have us believe that it is a bacterium. I was very much interested last year when I happened to be at Murphy's clinic on the day when Dr. William J. Mayo returned from his European trip, and Dr. Murphy invited him to tell what he had found out in Europe, and he spoke for about half an hour, and the most of that time was devoted to describing the work that was being done in Rome in investigating the cause of cancer. He told us that in Rome they had gone back to the old Cohnheim embryonic theory; that they were there using an emulsion of embryos in the treatment of cancer in the experimental laboratory. They were not claiming anything, but the results had been quite marvelous, and I have been much interested to see some announcement of these results and of the investigations which have been carried on there. Dr. Mayo himself seems to think that this work which is being done there promises more than anything else as to a specific cure in the treatment of cancer. Another point is with reference to the treatment of benign or non-malignant cancer. Dr. Burch spoke of the importance of removal and examination of the specimen. I would go still further, and I am considered radical by many, but I am very certain in the present state of our knowledge of cancer of the breast the best thing to do, when we have a tumor of the breast, is to do a radical operation, not to merely take the tumor out and examine it, but go ahead and do a complete removal of the glands. That position is radical, but I have seen cases of so-called benign tumor have a recurrence in a few months after its removal. I have seen this so often that, in spite of criticism by others, I would not hesitate to do a radical operation where we have a distinct tumor of the breast. The only other point I wish to mention is the one Dr. Tigert brought out in reference to the contraindications of the operation, and among them he mentioned extensive involvement of the skin. Most of the text books describe this extensive skin involvement under the term cancer en cuirasse; we recognize it as a contraindication to the operation, but we do not generally have pointed out to us any help in forming a prognosis. We do not hear it mentioned that while there is a diffuse lymphangitis of the skin, we hear of the deep glands, the axillary glands, and the supra-clavicular glands and mediastinal glands, being contraindications, but we do not hear of that diffuse lymphangitis of the skin affording us any help in the prognosis. From my own experience I have observed that where we have very extensive involvement of the skin, where we have that dimpling of the skin on pressure, all of the papillae being retracted, when we push the skin up, if we observe this one point, it will give us a good idea of the prognosis in the case, where we have this condition. We know there is

extensive distribution of the lymphatics of the skin. We see good evidence in cases of erysipelas, and we have much the same condition where we have cancer. Once the disease has invaded the lymphatics, we do not know how far it has extended. We should make a wide sweeping incision in these cases, go very far from this dimpling of the skin, but if we go far of that, making a good, sweeping incision, if we do a plastic operation to cover any defect in the skin, we will have a very much better chance of obtaining a complete cure."

Dr. J. M. King, Nashville—"I am sorry that I did not hear the paper because I know it was a very thorough and excellent one. I wish to emphasize one point Dr. Burch brought out, and that is the treatment of cancer with the X-ray primarily. I can better illustrate this by mentioning the case of a patient who came to me about two months ago with a nodule about the size of a walnut in the breast, and she insisted upon the application of the X-ray to the tumor. I am so firmly convinced that every tumor of that kind should be removed that I positively refused to treat her with the X-ray. She did not like it, and she found some one who applied the X-ray treatment without removal of the tumor. I think this is strictly malpractice. I do not think any practitioner should apply X-rays to tumors in the breast unless they are recurrent cancer. But primarily the tumor should be removed, examined, and if found to be malignant, the entire breast should be removed with a dissection of the glands. In recurrent cancer, where we have multiple nodules, then probably the only thing to do is to use the X-ray, and I have seen these cases yield beautifully. The nodules would disappear and give the patient a longer lease of life. Where there is a diffuse infiltration of cancer cells throughout the chest wall, to a great extent under the skin, that form will be influenced to a considerable extent by the application of the X-ray, but I do not know that it will cure a case, but it will retard the growth."

Dr. E. T. Newell, Chattanooga—"This paper recalls to my mind two cases that I had some time ago of tumors of the breast in negro women. In both of these cases I was quite sure the tumor was malignant, but at that time I was practicing in a small country town and very far removed to have a microscopic examination made or a Wassermann reaction. We gave the patients the benefit of syphilitic treatment. We rubbed them, inunctions of mercury and belladonna, and gave them iodide of potassium internally, and in both cases the tumor disappeared. If I had a case of tumor of the breast to deal with, and I was sure it was not of syphilitic origin, I would do a complete removal of the breast. But I have mentioned these two cases to show you that there *are* some tumors of the breast in women over thirty-five years of age that are not malignant. In one of these two cases five years has elapsed with no return of the tumor, and in the other, three years have elapsed with no recurrence."

Dr. McPheeters Glasgow, Nashville—"I would like to say that this paper and this discussion strikes me as interesting from the standpoint of advising operation for the removal of tumors of the breast. In this connection I want to relate a case. The patient was a maiden lady, seventy years of age, whom I was called to see with a history like this: She had had for thirty years a lump in the breast, and a doctor thirty years ago advised her to go to a surgeon and have the breast removed. She declined operation. At times there would be some hemorrhage in the nipple. She was in good health, and some six weeks ago she went to a town on a visit not far from here, and on the way down she noticed that there was some oozing from the breast and quite a severe hemorrhage. A surgeon was called in, who was a very good man; he examined her carefully and told her she had a malignant growth, and in turn told the family the patient would not live more than two or three weeks, and the breast ought to be removed at once. When she came back to Nashville she was brought here in a weak condition. I saw her from the train to her home, and in examining the breast I found that the nipple was completely gone in the left breast. There was a cavity in the breast; pus was discharging; she had a pulse of 120, with considerable temperature, and was very much prostrated. The breast was freely movable, and there were no enlarged glands in the axilla, and while she was prostrated, she did not appear to be in a cachectic stage of cancer. I came to the conclusion that it was a suppurating cyst and that some infection existed which caused the sloughing to occur. As they were opposed to operation, and as I did not advise it, I watched her for a little while and she remained in fairly good condition. After three or four days' dressing of this breast and using peroxide of hydrogen and permanganate of potash to destroy the odor, the other breast began to have a slight hemorrhage. It was freely movable. I put on antiseptic dressings on both breasts, cleansing these breasts, and keeping on compresses and supporting them, and in six weeks they had healed completely. No tumor could be felt in the breast. There is a case if it had been taken and operated on would have been pronounced cured as cancer of the breast and the operation given the credit. It was nature that relieved this suppurating cyst of the breast, and I think we all agree that in tumors of the breast in young and middle aged people, it is advisable to remove the breast immediately, but in a woman over fifty, it might be well to watch it carefully before advising operation, and certainly not to advise it upon seeing the patient once or twice."

Dr. William T. Black, Memphis—"The subject of cancer is one that is demanding a great deal of attention today. As the doctor brought out in his paper, the disease seems to be on the increase. The diagnosis is made clearer by recent symptoms, and so forth, which deserves as much attention as tuberculosis at the present time. When we consider the statistics of England and Wales, as given by Dr. Burch, namely,

that one woman out of every thirty, who reaches the age of thirty-five, dies from cancer of the breast, and the percentage of patients who die from cancer of the uterus, it behooves us to do something to try and lengthen the lives of these patients by early operation. I think the facts brought out by Dr. Crile in regard to age and muscular ability show a curious state of things. It is different from any other disease to which the human being is heir; that is, the younger a person is, the more muscular he or she is, the better developed she is, the more unfavorable the prognosis, and I think if we rely upon making a diagnosis of glandular involvement and skin infection we will wait too long to do the patient much good, because oftentimes we have cancer cells in the lymphatics without any enlargement of the lymphatic glands. I think it is important to us from the standpoint of prognosis to know the size of the glandular enlargement. He says the larger the gland and the closer it is to the breast, the better the prognosis, and that the more numerous the glands, small hard nodular masses, the more unfavorable the prognosis. It has always been a curious thing to me to know that certain families are particularly affected with cancer. It seems that facts have established that people with tubercular family histories, those with joint affections, and those who eat meat, have cancer oftener than those who are vegetarians, and who have the history I speak of. In regard to the treatment of cancer, it is a settled fact that early extirpation is the only remedy, and I think all cases of tumor of the breast should be considered malignant and treated as such unless otherwise proven. After removing a section of the tumor for examination at the time of the operation, a frozen section should be examined, and the place where the tumor has been removed should be thoroughly cauterized so as to prevent the further spread of the disease by the lymphatics."

Dr. John Overton, Nashville—"There is one point in reference to the treatment of cancer that has not been mentioned, and that is the use of Coley's fluid. Because of the fact that Coley himself reports several remarkable cases of advanced cancer in which he secured favorable results, I think we should use this treatment in all inoperable cases also as a prophylactic against return, unless some serum of more pronounced value comes up in the meantime."

Dr. William Litterer, Nashville—"I wish to emphasize the importance of examining the axillary glands in these cases of cancer, especially from a prognostic standpoint. It has been shown by Bloodgood in a most excellent article in the American Journal of Medical Sciences, quoting from Dr. Halstead's clinic of two hundred and ten cases, in which they had examined very carefully the axillary glands microscopically, making serial sections. In the axillary glands in which no tumor could be found, 85 per cent were living after three years. This seems to me to be very important. Glands in the axilla may not be distinctly palpable and yet carcinomatous cells can be demonstrated. On the other hand lymph nodes may

be swollen from a breast carcinoma and still be no cancer cells demonstrable in serial sections. A few days ago I was reading the statistics that have been compiled concerning the increase of cancer in general. It stated that in the last fifty years, in England, the number of cases of cancer has trebled. It was shown that northern countries have more cases of cancer, and that more people die from this disease in the northern part of Europe than in southern countries. In England there were 91 out of a hundred thousand that died from carcinoma; in Norway there were 110 out of a hundred thousand, and in the Netherlands there were 100 out of a hundred thousand. Coming down to Prussia, there were about 78 out of a hundred thousand, and France in the neighborhood of 56 out of a hundred thousand. Going still southward to the Mediterranean countries, we find in Spain about 48 out of a hundred thousand, and hanging along from 45 to about 60 in other countries bordering on the Mediterranean. In England, according to the same article, there appeared last year a comparison between those dying from pulmonary tuberculosis and those from cancer—the number dying from pulmonary tuberculosis was 38,000 while 34,000 died from carcinoma."

Dr. C. A. Robertson, Nashville—"I want to say a word with reference to metastases in cancer of the breast, particularly in connection with the report of a very unusual and remarkable case which came under my observation within the past eighteen months. Believing as I do in Handley's lymphatic formation theory, I think it is urgently necessary to operate early in these cases and remove as large an area of the skin surface, as well as the underlying tissue, as is compatible with a proper surgical technic and safety to the patient. The particular operation that strikes my fancy is that done by Rodman, which is rather simple in its execution and has been satisfactory in its results in my hands. There is no doubt but that there are many tumors of the breast that are not malignant, but certainly we should not pin our faith to certain local symptoms, the presence or absence of them, in determining the malignancy of a given tumor. This most remarkable case which I shall presently report came under my observation less than two years ago, with a small tumor in the lower outer quadrant of the breast, freely movable, neither attached to the skin nor to the deeper structures, and was about the size of a lemon. The patient was otherwise in fairly good health, barring the co-existence of rheumatism. The tumor was removed, submitted to a microscopist for examination, who reported it to be an adeno-carcinoma, and within a short period the breast was removed thoroughly after the method of Rodman. The subsequent history of the case becomes interesting. Within a period of about four months she developed metastasis in the opposite mediastinum. There was rather a large growth, and during the progress of the metastatic process we had the occurrence of a spontaneous fracture of the humerus on the side from which the breast

was removed. This fracture occurred while the patient was lying in bed without the possibility of muscular action acting as a factor in the production of the fracture, or without any external violence of any kind, it simply snapped while the patient was lying quiet. This arm was put up in a fixation dressing, and to my surprise perfect union resulted. Within two months thereafter the same accident happened in the arm of the opposite side under like conditions, producing a spontaneous fracture. Another metastatic feature to me was the development of malignancy in the spinal cord, producing hemiplegia, and subsequently the patient dying of exhaustion. I wanted to report this case particularly because of the interest of the occurrence of double spontaneous fracture and because of the special metastasism mentioned, which is somewhat rare. I made quite an exhaustive investigation of the literature at the time and found only a few cases reported. I take it, therefore, that my case is one of some considerable interest."

Dr. W. H. Witt, Nashville—"In connection with the recurrences of cancer, I would like to refer to a case that came under my observation very recently. The ordinary idea is that if a patient goes three or four years without a recurrence the case is considered cured. Has the surgeon a right to consider his patient cured if a recurrence has not taken place within two or three years? During the past winter I had seen two cases, both near the city, in which one after ten years, and the other after seven years, have gone without a recurrence in the thoracic cavity, with the exception that there was gradually developed a hemorrhagic fluid in the pleural sac in each case. First, I will say the fluid was not strictly hemorrhage at first, but subsequently it became so. In each case there was some induration about the soft tissues on the chest wall, and evidences of very extensive abrasion or infiltration of the cells. Both did not appear to be on examination more than simple cases of the disease. Apart from the effect on the general health, which did not decline very much, there developed hemorrhagic effusion of the sac. These things taking place, one patient died in the course of two or three months thereafter, while the other patient is still living, but gradually declining. Here are two cases in which the recurrence took place after ten and seven years, metastatic in their nature."

Dr. Tigert, closing—"I wish to thank the members of the association for the liberal discussion of this subject. In regard to the etiology spoken of by Dr. Roberts, it is mere child's play to attempt to decide the etiology of cancer with our present knowledge. Dr. Roberts calls our attention to the fact that there are cancer houses, but where are the surgeons who get infected fingers from operating on cancer? We cannot find them. Such cases are so rare that some men doubt their existence. If cancer is infectious, why is it that the men who handle these cases do not contract the disease? I do not wish to be recorded as saying the Cohnheim theory is correct or that cancer is infectious. Personally, I am inclined to the

Cohnheim theory. I thoroughly agree with everything Dr. Burch has said; therefore, it is unnecessary to dwell on his remarks. He drew attention to the fact that one woman out of every twelve after reaching the age of thirty-five dies of cancer. This is an appalling fact. The best statistics we have are to the effect that nine women out of ten, past the age of thirty, having a tumor in the breast, are either malignant or will become so, and that in thirteen cases out of every fourteen, in women past the age of thirty-five, with a tumor of the breast, the tumor is malignant. In women past thirty, we should regard a tumor of the breast as malignant unless proven otherwise. We should not take the attitude that tumors of the breast must be proven malignant before we operate. It must be proven that they are not malignant before we agree not to operate. If, after every possible test, you cannot prove them non-malignant, they should be operated on radically. Dr. Glasgow said that had his case been operated upon it might have been reported as a surgical cure for cancer. In this I think he is in error. It is presumable that the specimen would have been examined, microscopically which would have shown it to be inflammatory. Granted you do operate on a patient who has a tumor of the breast which is not malignant, the mortality of the operation is about 2 per cent. You have deprived a patient of her breast unnecessarily; but, on the other hand, if you wait and dilly-dally with these patients, waiting for text-book signs of malignancy, then you are going to have a tremendous mortality because of delayed operation. If we would save the most lives we must operate on tumors of the breast radically in patients past the age of thirty, unless the non-malignancy of the tumor is absolutely established. As to gumma of the breast, patients with gumma of the breast should show other signs of syphilis as well, which should put one upon his guard. A Wassermann reaction or a few hypodermic injections of mercury with exhibition of the Iodides should clear up the diagnosis. In regard to Coley's fluid, so far as I am concerned, from my own observation, I believe I would almost as soon have cancer as to take this fluid. The agony of these patients after injection is often very great. I saw one such case treated by Coley himself, and I do not see any good grounds for its use, since Coley's results are not obtained by any one except himself."

MILK IN ITS RELATION TO HEALTH OF INFANTS.*

BY HENRY ENOS TULEY, M.D.,

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Commission, and Chairman of Council
of American Association Medi-
cal Milk Commission.*

Conservation is the cry of the day, but unfortunately too much attention is given the nation's natural resources and far too little paid to the infant population of the

*Read before Nashville Academy of Medicine.

country which must eventually people it and develop the conserved resources. The mortality among infants, during the first five years of life, is appalling, and many causes for this toll of death are in constant operation. Physicians, scientists, philanthropists, and social workers are recognizing the necessity of doing something to stop this wanton loss of life, and the formation of the American Association for the Study and Prevention of Infant Mortality is the result of much thought upon this subject. The annual meeting in Baltimore last fall resulted in great good, the next meeting in Chicago in November, 1911, brings closer to us in the South and West the fact that more sympathizers and workers are needed in this special field of conservation.

A discussion of any of the many causes of this large mortality by so important a body as the Nashville Academy of Medicine is an important step forward and should result in great good.

One of the most potent factors in keeping up this death rate is the subject of this paper, viz: "Milk in Its Relation to Health of Infants," and while an exhaustive study of the subject is not possible in the time limit allowed me, I hope to be able to direct your attention to some of the most practical phases of the milk problem as it concerns the infant, the physician and the municipality.

A truism, accepted by all who have given any thought to the subject, is that no food is as suited to the needs of the infant as breast milk. Unfortunately maternal nursing is not possible in all cases, and it is a substitute for the breast which has so concerned the brightest minds of the profession today. To have saved the life of an infant deprived of its natural nourishment by a scientific adaptation of milk to its needs is as deserving of commendation or praise as the successful removal of gall stones or the saving of a patient with a general peritonitis following appendicitis, but it is not so apt to receive the same notice.

Cow's milk is the best substitute for breast milk, for no proprietary or artificial food answers all the demands of the growing infant's nutrition. As an infant food,

in fact, milk to be used for any purpose should answer the following requirements: it must be from healthy cows, known to be free from tuberculosis; properly fed, and the milk of different standard; free from adulterants or preservatives. The cows must be groomed, with well-wiped udders, milked in clean barns of proper construction; in clean sterile pails, properly made; milked by healthy milkers, properly clothed, and with clean hands. The milk of each cow should be removed from the milk house immediately and chilled at once, bottled immediately and delivered to the consumer as soon as possible after milking, and kept cold until delivered. Due attention must be given to the proper sterilization of everything in which the milk comes in contact.

All of these requisites must be carried out; a single error in the technic may render the milk entirely unfit for infant feeding or even ordinary household use.

Attention can be called to these requisites but briefly within the limits of this paper, but it is to be hoped that elaboration of them will be possible in its discussion which I trust will be full and free.

The relation between tubercle bacillus of the bovine type and the bacillus of the human type has provoked much discussion. The positive identification by many observers of the bovine bacillus in human lesions is a matter of record. Anderson calls attention to the work of Schroeder and Cotton, who have shown that cows so slightly affected with tuberculosis as only to be discoverable by the tuberculin reaction pass virulent bacilli in their feces, disproving the point previously made by experts that unless the udder was tuberculous no bacilli could get into the milk. Bovine tuberculosis quickly spreads in a herd, hence the necessity of knowing the condition of each individual cow in that herd. Tuberculin in the hands of an honest and scientific veterinarian is an absolutely reliable test, and a municipality which permits milk to be sold which is not from a tuberculin tested herd has not properly safeguarded the health of its citizens. Conservatively, it may be stated that tuberculosis will be found to exist in from 15 to 30 per cent of herds not

previously tested for tuberculosis. Of 24,685 dairy cattle tested in Massachusetts, reported by the Bureau of Animal Industry, 50 per cent were tuberculous. In Washington, D. C., the Department found active tubercle bacilli in the milk from 10.7 per cent of 102 dairies of the city, by injecting the milk into guinea pigs. The number of tubercular infected milk supplies in every city in the United States is probably as great if not greater than was demonstrated in Washington. The possibility of tuberculin infection through the medium of butter contaminated with the tubercle bacillus should also be remembered. Proper attention should be paid by the dairyman to the isolation of sick cows from the herd, and all cows not used for milk purposes, which should include cows before and after calving.

Milk may be described as a yellowish white, opaque fluid, composed of water, butter fat and solids not fat, among which are casein, albumin, milk sugar and ash.

Van Slyke* gives the following average of 5,552 American analyses of cow's milk:

Water	Total Solids	Fat	Casein	Albumin	Sugar	Ash
87.1	12.9	3.9	2.5	0.7	5.1	0.7

The sale of milk has long been regulated by license with chemical standards set by law. These standards vary considerably from 11.5 per cent total solids and 3 per cent butter fat, in Montana, to 13 per cent total solids and 3.7 per cent butter fat in Massachusetts. The standard adopted by the Government, regulating interstate commerce requires:

Total Solids	Solids Not Fat	Fat
12	8.75	3.25

and this seems a very safe minimum standard for general adoption.

Cow's milk will vary in its analysis, especially in its butter fat content, according to the breed of cow, the season, the feed, the physical and mental condition of the cow at the time of milking and the stage of the milking. Swill or distillery waste should be declared by ordinance unfit for feeding to milk cows. Aside from its direct effect

upon the milk, it is impossible to prevent filth and bacterial contamination of the milk in a barn housing a herd so fed.

In this connection it would be well to state that the occasion often arises for the physician to combat the popular lay idea that the milk from one cow is the best for infant feeding. The milk from a herd is far better for infant feeding, and the butter fat content should not be too high, hence the milk from a mixed herd is to be preferred to that from an all Jersey herd.

It is very easy to adulterate milk which may be accomplished by skimming, or the addition of skim milk, addition of water (or as was brought out in an ordinance court case in Paducah, Ky., recently, when the defendant denied adding water to the milk, the water was always poured into the can first, the milk being added to the water), addition of coloring matter, preservatives, thickening agents, etc., all of which can be effectually prevented by law. The addition of water is perhaps the most frequent form of adulteration, and the most serious menace to health as the addition of impure or polluted water has been the cause of many milk-borne epidemics.

*The diseases which are most apt to be carried by milk are typhoid fever, diphtheria, scarlet fever and tuberculosis. Five hundred epidemics have been compiled from literature. The most notable epidemic of typhoid fever occurred in Stamford, Conn., April 15 to May 28, 1895. Out of 386 cases of typhoid, 97.1 per cent had used milk from one dairy. There were no cases of typhoid fever at the dairy producing the milk, but the well water used for rinsing the milk cans was found polluted. In March, 1893, the writer investigated 54 cases of typhoid in Louisville, 44 of which took milk from one dairyman, the bacillus of Eberth being isolated from the spring water at the dairy.

While no organism has been isolated which can with assurance be called the specific cause of scarlet fever, 51 epidemics of scarlet fever have been studied where the association between an infected milk and the epidemics was so close and the suspen-

*Van Slyke Modern Methods of Testing Milk and Milk Products.

*Bulletin 56 Hygiene Laboratory.

sion of the milk caused a cessation of the epidemic that it left no room for doubt that the milk was the cause of the outbreak.

Undoubted isolation of the Klebs-Loeffler bacillus from milk suspected of being the cause of two epidemics, has been reported.

A factor to be reckoned with in the contamination of milk is the so-called "bacillus carrier," diphtheria or typhoid fever bacilli being present in persons apparently perfectly well, they being usually unaware of the menace they are to the public health.

No fluid is so capable of contamination by bacteria as milk, and the number of bacteria found in a given sample is a fair indication of the care taken by the dairyman in its production and handling between the dairy barn and the consumer.

It has been stated that the citizens of Berlin consume 300 pounds of cow dung in their milk daily, and the citizens of New York consume ten tons of filth and refuse in the same manner.

It hardly seems possible that the average market milk contains more bacteria to the cubic centimeter than the sewage of our larger cities. Such, however, has been shown to be the case. Rosenau has shown the average bacterial count of Washington's milk supply in 1907 was 11,270,000; in 1906, 22,134,000. The sewage in Boston from 1894 to 1901 averaged 2,800,000, and London for the same period 2,000,000 to 11,000,000.

Winslow* very properly calls attention to the fact that the "question of dirt and the bacterial contamination of milk is of infinitely greater importance from the standpoint of health than a high chemical standard governing the composition of milk, for the reason that very poor milk, viz: that which is low in proteids, fat and milk sugar, is still very valuable as a food and contains a great deal of nutriment, provided that it is sufficiently clean to be consumed with safety. On the other hand, it is now perfectly well understood that dirty milk and milk bacterially contaminated is not only responsible for the high death rate prevailing among young children from gastro-intestinal disturbances, but that polluted milk is

also responsible to a large degree for the spread of such infections as diphtheria, scarlet fever, typhoid fever, and tuberculosis, and for acute cases of milk poisoning, which are by no means uncommon." The sources of milk contamination are many, among them may be mentioned, from the milker's hands or clothes, from the cow's udder or flanks, from the air and dust of the barn, the milk pail, the cooler, the cans, the bottles, the water supply, or it may become contaminated in transit or at the final point of distribution.

But little attention is paid in the average dairy to cleanliness which is as necessary in the cow as it is of the milker and utensils. If the cow is properly groomed, and the udders washed and dried, much dirt will be kept out. Clarifying or straining the milk may remove the cow dung, but it is impossible to remove the bacteria in that way.

Of what avail is the municipal control of the chemical standard of a milk supply or the enforcement of a tuberculin test when it has no supervision of the barns in which the cows are milked, or the manner of handling the milk between the barn and the consumer? I have always maintained that a city should have the right to inspect all milk dairies, no matter if located in adjoining counties or even states, and if not up to the standards which should be prescribed by ordinance the permit or license to sell milk should be refused or revoked. Education of the dairyman in the refinements of the technique of dairying goes hand in hand with inspection, then exercise of police power if knowing how to clean up, and its importance, they remain dirty. Concrete floors, ample air space, king system of ventilation, tightly sealed ceilings, twice daily removal of manure and the adequate water supply to permit of flushing the floors, are some of the requisites as to the barn to the production of clean milk. Hooded pails or pails covered with cotton and gauze keeps out much of the dirt. Healthy milkers in clean washed white suits and caps, with clean, dry hands is almost as essential a detail as the grooming of the cows and washing of the udders before milking. The

*Quoted by Anderson loc. cit. p. 403.

Storr's (Conn.) Experiment Station showed conclusively the advantage of wiping the udders before milking. The average of thirteen experiments showed 7,058 bacteria in milk from unwiped udders, and 716 from wiped udders. The feeding of dry food, hay or silage just before milking is one of the most potent factors in contamination of the air which greatly increases the bacterial count of the milk, or imparts a foreign taste to it.

Extracting the animal heat within fifteen minutes after milking by running the milk over a properly constructed cooler is one of the most effectual means of keeping the bacterial count within the limits of safety. Milk of a temperature between 65 and 100 degrees F. is an excellent medium for bacterial growth, hence the importance of early cooling and maintenance of a low temperature until delivery. "Clean milk, quick cooling and short time between milking and consumption are very important factors in securing pure milk."* The milk should be bottled immediately after cooling, and the bottles placed in metal shipping cases, heavily iced, and covered, the ice being renewed if it melts before the milk is delivered. The same precautions should be taken to cool the milk if it is shipped in cans to a central distributing plant, there to be bottled, and the cans small enough to be set in cases for icing. In no case should milk be delivered except in bottles, not bottled in the wagon from a large can, but either at the dairy, greatly to be preferred, or at a central distributing plant. No dairy should be allowed to operate unless provided with a steam plant and properly constructed sterilizer. By thorough washing with hot water and soap, and steam sterilization, the bottles and utensils can be rendered sterile, otherwise the milk will be unfit for consumption. Our local Milk Commission developed this recently in a dairy wishing to begin shipping certified milk. The dairy occupied a splendid location, the barns, herds and milk houses were according to specifications, yet the bacterial count of his milk remained persistently high. Speci-

mens from every step in the handling of the milk were plated, from the pail when half full, as it was poured into the cooler, and as it was bottled, with practically no variation in the number of bacteria, all very high. It was found that the steam pipe from the boiler into the sterilizer entered about two feet from the floor and the pails inverted on the floor, received no live steam at all, and were never sterile. Bottles and utensils hung above the entrance pipe were sterile. Changing the pipe to allow the entrance of the steam from the floor corrected the trouble entirely.

It should not be amiss to refer, at this point, to ice cream as a means of dissemination of pathogenic and other bacteria. In the first place, but little ice cream comes up to the Government standard (contained in Circular No. 19, Department of Agriculture), namely, 14 per cent of butter fat. An investigation of the majority of ice cream factories and confectionaries will show criminal negligence in the handling of the raw materials, and filthy surroundings in which it is manufactured and stored. The long storing of ice cream before it is used is another source of contamination. The use of condensed milk for the making of ice cream should not be permitted by law.

Realizing the difficulty of proper municipal control of the entire milk supply of his city, and appreciating fully the necessity of a safe clinical work, because of a fatality in his own family for want of it, Dr. Henry L. Coit, sixteen years ago at Newark, N. J., conceived the plan of an agreement between a financially disinterested commission of physicians and a dairyman, under which the dairyman was to produce a milk according to rules and regulations prescribed by the Commission, his product to be certified to and known as certified milk. Mr. Stephan Francisco, of Montclair, N. J., was the dairyman selected, the Commission formed was the first Medical Milk Commission, and from this modest beginning Mr. Francisco has the largest certified dairy in the world, and there are now more than sixty Medical Milk Commissions scattered throughout the country doing the highest type of altruistic work.

*Circular 142. Bureau of Animal Industry.

The history of the Jefferson County, Kentucky, Medical Milk Commission is of interest and illustrates what every other city can do if a few determined men will undertake it. Louisville's milk supply was notoriously bad, as bad as any in the country. Swill or distillery waste was indiscriminately fed to dairy cattle, and at many dairies the cows being fattened on this slop were milked in disgustingly dirty barns, the milk being sold as a by-product. The Health Office was impotent, for political reasons nothing was done. We finally persuaded the State Pure Food Department to make an investigation, and dairies were examined and a detail report made of each. They were described and their deplorable state explained in a paper by R. M. Allen, head of the department, before the Jefferson County Medical Society. The necessity of at least one supply of clean milk for infants which could be relied upon was urged at the conclusion of this paper, and a committee was appointed to look into the question of a Milk Commission and certified milk. The committee later reported it was both practical and urgently needed. It was then appointed a permanent Milk Commission, and set about finding a dairyman willing to live up to its requirements, which were very moderate at first. After three months one was found, who shortly began to deliver twenty-five quarts daily, today we certify to the product of seven dairies, milking over 250 cows, with a daily output of 1,800 quarts of milk a day. The Jefferson County Commission was one of the charter members of the American Association of Medical Milk Commissions and one of its members is Chairman of the Council. It obtained an amendment to the State Pure Food law recognizing the term certified milk and making it impossible for the term to be used by anybody except a Medical Milk Commission, appointed by a regularly organized county medical society. New York State preceded Kentucky in safeguarding the use of the term certified milk, and New Jersey the past year passed a similar law.

It is expensive to properly produce, handle and distribute clean, cold milk. Such milk cannot be sold at less than 10 cents

a quart and enable the dairyman and middleman to make a fair profit. Certified milk cannot be sold at less than 12½ cents a quart owing to the increased cost of production and handling and the additional express rates by interurban and railroad companies when it is shipped in bottles. This increased cost to the consumer unquestionably places it beyond the reach of the poorer classes, but to meet this demand, for the babies of the ignorant and poor are most in need of conservation, philanthropic associations have been formed in many communities supported by municipal and voluntary contributions, to furnish certified milk at cost to the poor, or free to those found worthy and to do educational work among the mothers in their homes, by trained nurses.

It has been stated above that the question of clean, cold milk is a matter of education of the dairyman, who must be taught how to produce it in a scientific, up-to-date manner. It is also a question of education of the public to the necessity for demanding a clean, cold, wholesome milk. Of what avail is it to raise the standard of milk and have the public clamoring for a cheap, dirty milk, for a cheap milk is always a dirty milk?

By example certified milk in Louisville has had a distinct effect in the betterment of the general milk supply of the city, and it has made possible the excellent work of the Babies' Milk Fund Association, which during the season of 1910 fed 558 babies with a mortality of 3.05 per cent. The mortality of the babies of the city under one year of age for the last five years has been 15.9 per cent, while the death rate of the babies of the same age, fed by the association, was 7.02 per cent. The objects of the Babies' Milk Fund Association are as follows:

To reduce the infant mortality of Louisville.

To increase the health and vitality of its children.

The encouragement of maternal nursing.

The establishment of stations for the distribution of clean milk to needy babies.

The maintainance of a well-equipped modifying laboratory.

The careful feeding of each child under the direction of a physician.

The care of sick children and the oversight of well children in their homes by graduate nurses.

The persistent education of mothers in the proper care and feeding of their children by means of lectures and practical instruction in the homes.

The education of the public at large in the necessity of clean milk and intelligent care for young children.

In 1910 the association fed 558 babies, distributed 141,846 bottles of milk, 4,953 nurses' visits were made, seven stations for the distribution of milk were open from May to October with a trained nurse in charge of each, and \$5,982 were collected.

While apparently the chief object of the association is the distribution of clean, cold milk to the babies of the poor, the nurses care for the sick babies in their homes, and educate the mothers in the proper care and feeding of their children. Certified milk was sold at the price of market milk, 8 cents a quart at the beginning of the season, 9 cents a quart later when the price of market milk was raised, adapted (or modified milk costing the association 17 cents a day was sold at 10 cents.

The association maintained a modifying laboratory of its own in charge of a graduate nurse and two assistants, where all of the adapted milk for the younger babies was prepared according to physicians' prescriptions, and put up in feeding bottles for each feeding. Weekly bacterial counts were made of the various modifications and of the whole milk from which it was prepared, which were exceedingly gratifying, the maximum being 22,000 per cubic centimeter, the majority running under 8,000.

The work of the nurses in the homes of the babies was productive of great good. Where the babies remained well they were visited weekly and daily or oftener in case of illness. The sickest babies were given care in the various hospitals of the city. Each nurse worked with the definite purpose of keeping all the babies in her district

well, even though not taking milk from the station.

The milk was distributed from a central station from 2 to 3 p. m. daily in special containers, packed in ice. Once a week a consultation was conducted by the station doctor, who served without compensation. The babies were stripped and weighed and general condition noted. If necessary the prescription for modified milk was adjusted to its needs and needed instruction in the home care of the baby given.

Mothers' meetings were held at frequent intervals at which topics of special interest to mothers were discussed by physicians and this was further carried on by the nurse in the homes.

It has been shown that stations should be open the year round, to accomplish the greatest good to the greatest number, and it will be the aim of the association this year to open fewer stations and keep them open the entire year.

Too much stress cannot be laid upon the importance of a strict supervision of a city's milk supply, of stringent ordinances, careful inspection of the dairies or distributing plants, and education of the producer. The formation of a Medical Milk Commission and the production of certified milk will do much to raise the standard of the general supply of the city. Clean cold milk is a possibility, but obtained only after most painstaking care and constant watchfulness from the moment it is produced until consumed.

FRACTURES OF THE TIBIA AND THEIR TREATMENT.*

BY PAUL F. EVE, M.D.

The tibia, like all long bones, is divided anatomically and surgically into a shaft and an upper and lower extremity. We shall, therefore, call attention to fractures as they occur respectively in each of these divisions.

The upper extremity may be broken by either direct or indirect violence, accompanied in most cases by a fracture or dislocation of the fibula. These fractures may

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be traverse, oblique, comminuted or impacted, and, in some cases, compound. The line of fracture occasionally run from the side of the head, entering the joint, separating one condyle; or it may follow the epiphyseal line, separating the epiphysis. When fractures occur on the anterior surface by direct violence, there is usually a marked angular displacement, the apex directed backward; or backward displacement of the lower fragment may produce an injury to the main vessels. When they are, however, produced by indirect violence, such as a fall upon the feet, the lower fragment is driven into the upper one splitting it, the fragments of which opens the joint. If a fracture occurs in this situation and the fibula remains intact, the displacement is very slight. The dangers of fractures injuring the joint should be carefully studied as serious conditions occur by inflammatory products of the joint, and as it takes an unusual long time for the repair of such a fracture. According to Stimson separation of the epiphysis has been noted in a few cases. Bruns collected four; Hutchinson says he has recorded ten, including three unpublished cases, and Poland collected twenty-four. The recent reported cases seen by Stimson are those of Heuston and Manly. In Hutchinson's list the extremes of age were one and sixteen years. The common cause appears to be a wrench of the leg, adduction or abduction, by which a transverse strain is made, but Poland's was compound, the patient recovering. In twelve the patient died or the limb was amputated. The ages ranged from three to twenty years. In all but one case the process bearing the tubercle of the tibia accompanied the epiphysis. The displacement was forward, forward and outward or lateral, and usually slight. In a number the diaphysis was also broken, and sometimes extensively. In several of the cases which recovered no trace remained of the injury. Separation of the tubercle of the tibia is due to violent contraction of the quadriceps and occurs only in those patients under twenty years of age. The fragment is drawn up and can be easily felt, and the individual is unable to walk.

Fractures of the shaft occur by either direct force, indirect force or torsion. Fractures in the upper part of the shaft are usually transverse, while those in the lower part are oblique. The fractures may, however, be V-shaped, comminuted and not unfrequently compound. When both bones of the leg are broken, the fracture of the tibia is commonly at a lower level than that of the fibula. The ordinary displacement is angular with overriding, the lower end of the upper fragment being displaced forward. In transverse fracture of the tibia, where the fibula is uninjured, there exists no deformity and the support of the fibula may even permit of walking. In oblique fractures the deformity existing, depends upon the direction of the line of fracture, which is usually from above downward, inward and a little forward, the lower fragment generally passing behind the upper one and rotates inward. Besides the frequent complication of a communicating wound of the skin and the comminution, which is so often the result of direct violence, injury of the principal vessels is sometimes met with.

Nepven, in a complete and elaborate paper read before the Surgical Society of Paris, collected more than fifty cases, among which are found examples of injury of both tibials, the peroneal and the nutrient artery of the tibia. Injury to the tibial or peroneal nerves are quite unusual.

Mouret collected twenty-seven cases of aneurysm complicating fractures, five of which were mistaken for abscesses and opened, while Stimson reports a case in which hemorrhage occurred from the anterior tibial artery, on the eighth day after fracture by direct violence, without displacement; the rupture was one and a quarter inches above the fracture and was evidently due to bruising of the artery by the wheel which produced the fracture. Direct fractures are more frequent than the indirect, the common causes being blows from heavy falling bodies, run over accidents, etc. Indirect fractures are caused by falling upon the feet from a height, compression, or by accidents with the foot held fast, inflection or torsion, or both. On ac-

count of the thickness of the head of the tibia and the prominence of the malleoli and the head, it seldom happens that the shaft is supported in its entire length even in the variety or run-over accidents. As it is the tibia which actually supports the body, it is clear that at the moment of fracture the fibula cannot alone withstand the weight of the body and so breaks, hence the frequency of fracture of both bones. The site of fracture is generally at the junction of the lower and middle third.

Fractures of the lower extremity includes those of the internal malleolus, caused by either direct force or traction upon the internal lateral ligament; the displacement is usually downward, with depression above the ends of the fragment. Lovenstein calls attention to an apparent typical injury, avulsion of a plate of bone from the anterior surface of the lower end of the tibia; the base of the fragment is below and is held by the anterior part of the capsule of the ankle joint; this fragment tapers to a point or ends more bluntly. In four cases seen by him the fracture was due to a fall from a height, and was always complicated by other injuries of the leg. The deformity due to displacement and shortening in the majority of cases gives a diagnosis at a glance; if not pronounced it is increased by the effort to lift the leg. Supramalleolar fracture is a term created by Malgaigne and applied to fractures which for the most part have their line running into the joint and usually comminuting the end of the bone, but there are cases in which the tibia is broken across, within an inch or two of its lower surface and with fracture of the fibula at or above the same level.

Next to fractures of the forearm, fractures of the leg are the most frequent. According to V. Bruns, 16 per cent of all fractures. They occur at any age, even in utero and intrapartum, but are far more frequent in well developed adults and in men more than in women. The tibia is broken much more frequently than the fibula. The following structures of the tibia may be palpated. The internal and external tuberosities, the whole of the external tuberosity, this being subcutaneous. The broad

anterior and inner surface (forming the skin) to the internal malleolus. The sharp crest throughout its whole length and the tubercle, which is also subcutaneous and can be distinctly felt on the anterior surface, being one inch from the articular surface, marking the lower limit of the upper epiphysis of the tibia. The narrowest part and the weakest place in the tibia is the junction of the middle with the lower third of the bone. The symptoms of fracture of the tibia as a general rule can be readily detected. Deformity due to displacement and shortening occurs in the majority of cases. If not pronounced, it is increased by any effort to lift the leg. The surface of the tibia permits of accurate palpation and even the slightest touch detects irregularities along the bone, especially when the fracture is recent. If, however, several hours have elapsed, palpation is hindered by pain and swelling, but even should this occur, by carefully pitting the swelling with the finger, the contour of the bone can always be felt. By grasping the leg above and below the point of tenderness and shifting the fragments, crepitation and preternatural mobility are discerned, except in cases of impacted fractures. Crepitus may be prevented by the interposition of the soft parts, but false motion will be present and bony crepitation can be distinguished on overcoming the interposition.

In transverse fractures there may be no deformity, but there may or may not be inequality of the fragments felt by the finger and there exist crepitation, mobility and often linear ecchymosis. Such a fracture might remain completely locked except upon lateral movement. In oblique fractures there exist crepitation, mobility and visible deformity. The tibia should be measured from the knee joint line at the upper border of the internal tuberosity, to lower edge of the malleolus to determine shortening. Shortening of the leg after union of the bones may be roughly estimated by comparing the height of the two knees while the soles of the feet rest upon the floor. It is often difficult in fractures near the ankle to palpate the internal malleolus, on account of swelling, but deep pressure with

the thumb will most often detect it. In fracture in this situation the pulse should be felt for in the posterior tibial and dorsalis pedis arteries. Simple fractures heal by bony union in children in about three to four weeks. Consolidation is proportional to the accuracy of co-aptation and immobilization. Any great displacement persisting, may mean consolidation delayed for many weeks, or even pseudarthrosis. Bony union without displacement, except where there is no tendency to such, is rare, as shown by the X-ray pictures. Slight lateral displacement and overlapping of the lower fragment corresponding to the obliquity of the surface, some axial deviation with prominence of the tip of the upper fragment, or inversely backward curvature of the leg with the concavity forward, are of rather frequent occurrence; the same applies to the persistence of a certain amount of inward or outward rotation of the lower fragment. The fundamental disturbance, as a rule, proportional to the amount of displacement, is fortunately less in fractures of the leg than would be supposed by the X-ray photographs. Compound fractures with small skin wounds, especially those due to outward perforation, if kept aseptic, often heal in the same manner and time as simple fractures. More time, however, should be given them for recovery in spite of the fact that union is frequently better than in simple fractures. The prognosis of compound fractures, when there even exist small skin wounds, is always more serious than that of simple fractures, and the functional result is often less satisfactory. The unfavorable prognosis which obtains in reference to intrapartum fractures, is based upon the fact that pseudarthrosis with tapering of the fragments and considerable shortening have been seen in not a few instances. These unfortunate sequelae are due partly to non-recognition of the injury at the proper time and the consequent improper treatment, partly to confusion with the so-called intrauterine fracture. If recognized promptly and properly treated an intrapartum fracture usually heals as well as one sustained later in childhood. The danger of

the thin skin being perforated by a sharp fragment of bone and a simple becoming a compound fracture urges the greatest care in transporting and undressing the patient. As a rule, reduction should be accomplished as early as possible and co-aptation obtained. This reduction can usually be effected by making extension from the foot and counter extension from the knee, the knee being in partial flexion. In cases of separation of the tubercle, the limb should be placed on a posterior straight splint and the fragment pulled down into place and held by adhesive straps and bandages and worn for from five to six weeks. It is always best to decide at once whether anaesthesia is required for reduction, so as to avoid painful manipulation, until treatment is instituted. In the absence of any displacement when anesthesia is unnecessary, the characteristic localized point of tenderness then becomes very significant and a fracture may be assumed and proper treatment instituted. It is usually stated that reduction is effected when the foot is straight if the prolongation of the inner border of the patella passes between the first and second toes, or if the line joining the anterior superior spine and the first metatarsal touches the inner border of the patella; but this statement is sometimes deceptive, and it is much more important to compare the contour with that of the sound limb. If it is not practical to obtain assistance and an anaesthesia is not required or contra-indicated, Bandens extension method as modified by Kolaczek is valuable to maintain uniform traction during the application of plaster of paris. A perineal sling is attached to the head post of the bed; a piece of wood the length and breadth of the foot, having a loop of sail cloth about three feet long laid between it and the foot, is bandaged to the sole of the foot and the ends of the sail cloth tied to a double rope, the latter being fastened to the door handle or any other permanent fixture and tightened by twisting. The foot is supported and the traction increased until the shortening is overcome. After the plaster of paris is applied and allowed to set, the extension is removed. Temporary splints,

such as wood, guttapercha, felt, etc., used for transportation, should be removed as soon as conditions permit and a permanent dressing for immobilization applied. Should there be much swelling, place the limb in a fracture box swung from a gallows and apply an ice bag for a day or two. Should blebs occur, filled with clear or bloody serum, they must be opened, dressed with some antiseptic powder and allowed to heal. Great care should be taken with the heel, as even slight pressure maintained for several days produces a sore which is slow in healing and complicates matters greatly. The position of the foot largely determines the amount of pressure falling on the heel. When the foot rests naturally, it is the position of slight plantar flexion. The heel in this position presses firmly upon the splint, the larger part of the weight of the body thus falling upon the heel. When the foot is extended to a right angle with the leg, the pressure upon the heel is in a large measure removed; hence in putting up fracture of the leg, the right angle position is the desirable one. Padding about the heel is of great service, the ring or doughnut pad being sometimes efficient. Slinging the foot by adhesive straps applied to the sides of the heel and foot and fastening to the foot piece of the splint is a very satisfactory method of treatment.

The requisites of a rational method are only met by continuous extension, or extension maintained by the plaster of paris encasement, both of which give satisfactory results. Continuous extension as recommended by Bardenheuer and his school to be effectual requires, according to Woff, strict observance of the following rules: 1. Application as early as possible. 2. The adhesive plaster strips should extend well above the fracture and in oblique fractures to the middle of the thigh. 3. The plaster strips should be applied closely at the ankle with the malleoli well padded, not separated by a spreader. 4. In oblique fractures 30 to 40 pounds may be insufficient and even 60 to 70 pounds be required. 5. The lower fragment, displaced backwards, may be drawn by vertical traction of about 10 pounds, with counter pressure by means

of a 20-pound sand bag, or loop upon the upper fragment. In private practice, it is quite evident, that on account of the constant supervision required by the extension splint, the plaster of paris dressing is preferable. Great care should be taken in the application of this dressing, as when applied too tightly a considerable circulatory disturbance takes place or even gangrene occurs. Separation of the lower epiphysis is a rare accident, but is more frequent than separation of the upper epiphysis, a fixed dressing should be applied for about six weeks.

It has been my privilege to have treated a great many of these fractures and also to have had quite a number come under my observation, and in not a few instances have I seen un-united fractures demand operative interference. In some of these cases the interposition of the soft parts prevented union, while in others the inability to maintain the fragments in co-aptation caused a like result. I have, therefore, come to the conclusion that there are some varieties of fractures of the tibia which call for an open method as the proper treatment. I base this conclusion upon the following facts: 1. Should non-union occur from the interposition of the soft parts and an operation be required after waiting the requisite length of time for union, the very nature of this operation results in a much greater shortening than would have occurred had the operation been performed at the time of the injury. 2. The time required for union in such cases is twice as long. 3. The physical condition of the patient is not near so good as soon after the receipt of the injury, his general health having already suffered in the many weeks which have elapsed in the effort to accomplish healing of the fracture. 4. The anatomic and cosmetic appearance is not near so pleasing.

The following recent cases may prove of some interest. Mr. M., age 39, was injured September 21, 1909. The cause of the accident being a runaway team, throwing him out of the wagon, the wheel of which produced a comminuted fracture of the left tibia at the junction of the middle with the lower third of the shaft, the fibula also sus-

tained a simple fracture. Reduction was accomplished, but owing to swelling a permanent dressing could not be applied until the fifth day. Coaptation seemed to be excellent and we had every reason to believe the result would be a good one. At the end of the eighth week the plaster of paris cast was removed, but to our great disappointment non-union was discovered. Friction of the bones and massage were applied and the limb again placed in a plaster of paris dressing. At the end of four weeks this encasement was removed only to reveal the fact that union had not taken place. Some weeks later an operation was performed and the end of the bones wired. During the operation, it was found that there were soft structures between the fragments of bone, thus explaining the causes for non-union. On account of impaired health recovery was slow, union, however, taking place with about $2\frac{1}{2}$ or 3 inches of shortening.

Mr. M., age 59, switchman in the terminal yards, received an injury on January 20, 1910, by being thrown from the top of a box car to the ground, landing on both feet. He sustained a compound fracture of the internal malleolus of the left foot, a fragment of which ruptured the artery and a fracture of the astragalus of the right foot. On account of excessive swelling, it was impossible to place either fracture in a permanent dressing for some time. Reduction was effected in both fractures, which healed kindly, and the patient made a good recovery and is able to place weight upon both feet and has resumed his duties.

Mr. E., age 34, switchman in terminal yards, was injured January 27, 1910, by being thrown off of top of box car, producing a fracture of the right tibia at its lower third. On account of being a very fleshy man he refused an anesthetic and reduction was accomplished with difficulty. He suffered intensely for ten days or two weeks and the swelling was so great that it was not possible to place the limb in a permanent dressing until the third week. This fracture united in the ordinary time, giving an excellent result.

Mr. B., age 19, terminal switchman, was caught between two boxcars while switch-

ing in the yard, and sustained a fracture of both bones of each leg. The fracture of the left leg showed the tibia to be broken at the junction of the upper with the middle third of the shaft with a compound fracture of the fibula at the junction of the lower with the middle third. The right leg showed a fracture of the tibia at the junction of the lower with the middle third, and a compound fracture of the fibula at the junction of the upper with the middle third. Permanent dressings were not applied for several weeks, the reduction being accomplished and coaptation maintained by extension. Both bones of each leg have healed without any complications and the union is excellent. There is a little discrepancy in the length of the two legs, measurement showing a little more shortening in the left leg.

DISCUSSION.

Dr. Jere L. Crook, Jackson—"There may be some papers read before this association that will not prove of general interest to the entire membership, but that cannot be said with reference to the subject of fractures, and particularly it cannot be said of the important division of the subject to which we have just listened. The subject of fractures of the tibia, as the essayist has said, ranks next in importance and frequency to fractures of the arm. There are three reasons, I believe, at present why the subject of fractures is receiving unusual attention from the surgeons of the world. In the first place, on account of the improved technic, with aseptic facilities, making it necessary and proper for us to operate on a great many cases where formerly operation would not have been done, thereby giving us an opportunity to practice a higher type of conservative surgery in the saving of mangled limbs. Another reason is the fact that on account of rapid facilities for transportation, the number of fractures occurring all over the world is rapidly increasing. The automobile has added more fractures to the list of accidents in the last few years than was anticipated or expected; and a third reason is the fact that every case of fracture may be regarded as a potential malpractice suit. So from these three standpoints, the subject must prove of general interest. Again, I might add, the general practitioner, even in the remote country, ultimately will have presented to him some of the most severe types of fracture of the limbs. He has no opportunity of referring the case to his city confrere, who has had a large experience and has unusual facilities to deal with such cases; but the proposition is up to him directly, and on the proper rendering of first aid to the patient depends the ultimate result in a particular case. So

consequently every surgeon, whether he be a surgical specialist or general practitioner, should study the subject of fractures and should attempt to get better results in the future than he has in the past. We have allowed other subjects, such as pathological conditions in the abdomen, and cases of that character which demand the greatest skill, to obscure the more common injuries we have to deal with, and we must now give more attention to fractures. In regard to the treatment of fractures of the tibia or the treatment of fractures in general, the question of operation or non-operation is always a paramount one. Perhaps some of you will remember the excellent address which Mr. Lane gave at the Atlantic City meeting of the American Medical Association in regard to the operative treatment of fractures, taking the broad position that every case should be subjected to operation, and presenting as a sidelight an exhibit of something over one hundred X-ray pictures, and among others showing the Lane plate invented by him, which has been used a great many times by himself and by other surgeons. I believe we certainly should not go so far as this distinguished English surgeon and say that all cases should be subjected to operation; but the consensus of opinion of the discussion which followed the reading of that paper by American surgeons was that we should operate only in cases where we cannot secure proper approximation of the fragments without operation, and where we have reason to believe there is an interposition of tissue between the fractured ends of the bone, and where there is proper environment for the performance of the operation. This view seems to be eminently sensible, and should be our guide in every case of this kind, whether the fracture be closed or an open one. If we have an open fracture, we know we already have the possibility of septic contamination, and we are not adding anything to the mortality of the case or to the bad prognosis of the case by enlarging the incision and by actual inspection and manipulation determining whether or not we can approximate the fragments. At the time the wound is opened we can remove interposed tissues and should we find that we cannot secure accurate adjustment of the fragments and maintain them there with ordinary external splints, we have a direct indication for some mechanical appliance; such as the Lane plate, ivory screws or nails, or silver wire, to hold the bone in position."

Dr. S. S. Duggan, Eagleville—"I was very much interested in Dr. Eve's paper. I wish to say that I sustained a fracture of the tibia and fibula with an injury to the knee, and as there was no doctor present to fix it up, I had to fix it up myself with the aid of a stout man and pulling until we got it straight and in position. The fibula was broken, and the smaller bone was a green stick fracture. The bone came out here on the inner side of my leg, and I can feel it now when I rub it; I can feel a sensation in my big toe. I treated it upon the principle of doing the work right, and not wait until eight days, as some of the doctors do in my section of the country, that is, wait eight days

before they bring the broken bones in position. This paper has been a very interesting one to me. I commend it, and it ought to be given more attention by the medical profession than it gets. I had to be on my back for twenty-eight days. I had to devise some means to keep my heel from catching fire (laughter). I had a box made to fit my leg, with a hole for the heel to rest in, with absorbent cotton in it. The principles enunciated by Dr. Eve in the treatment of these fractures are very sound, and they should be followed by every practitioner. I am one of the common every-day practitioners out in the country."

Dr. Eve, closing—"Dr. Cates is right in regard to cases where it is practically impossible to reduce the fracture on account of contraction of the gastrocnemius muscle, and where I have had these cases I have had to cut the tendon to reduce the fracture. I do not agree with the term conservative surgery; we really have no such thing. There is seldom any question as to when we should operate. All surgeons like to operate, but the careful man selects his cases. I think we at times go into extremes. To say that every fracture should be operated on, I cannot agree to. I have had many fractures which I have not operated upon and they have healed with excellent results. If you set a fracture so that the bones are approximated you will have union. When you have any tissue between the ends of bone, you can never look for union. You cannot examine sufficiently into that leg to see whether there is interposition of soft structures between the ends of the bone, but in many cases you can feel assured that approximation is accomplished and wait for the result before making an open operation. We are living in an antiseptic age, and operations can be made with little or no danger, but this does not justify us in operating on every case. I do, however, believe that in a case of compound fracture it is the duty of every surgeon to enlarge the opening and to see that approximation of the fragments is complete. I do not agree with surgeons who say that whenever we are called to treat a fracture the first thing to do is to cut down upon the seat of fracture and thus see that the fragments are in position. I do, however, agree that in doubtful cases it is much better to operate, as I believe the patient is saved not only much pain, but time in the union of the fracture."

TRAUMATIC PERFORATION OF ABDOMINAL VISCERA.*

By W. M. McCABE.

Superintendent and Surgeon, Nashville City Hospital.

MR. PRESIDENT AND GENTLEMEN: Traumatic perforations of abdominal viscera may be produced by an individual falling upon a sharp object, by blunt bodies hurled with great force, pneumatic pressure within

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the bowel, and by cutting instruments in the hands of an opponent. From a surgical standpoint it does not matter whether they be due to cutting instruments or bullets, for nearly all demand celiotomy and repair. Symptomatically a diagnosis of perforation can only be surmised for a bullet or knife blade may penetrate the abdominal cavity, and by some seemingly magic power apparently push the viscera aside and pursue its journey without injury. On the other hand, an individual may be mortally wounded, complain of no abdominal pain, and walk into the hospital asserting he is not badly injured. I have on several occasions seen individuals with intestinal perforations walk into the hospital, and in a few instances have seen them fall asleep upon the stretcher while the operating room was being prepared. He may, however, complain of excruciating abdominal pain, be exceedingly restless, and have the expression of great apprehension. Nausea and vomiting may be prominent symptoms. If the stomach is injured, haematemesis is present. The pulse and temperature may be around normal, but the celerity of the pulse and height of the temperature will depend greatly upon the conditions of fright and hemorrhage. His abdominal muscles are rigid, and he flinches and shows tenderness if pressure be made over the abdomen. If he be injured in the descending colon or sigmoid, he may express the desire to go to stool, and if the finger be inserted in the rectum we will find it contains blood. If the genito-urinary tract has been perforated, a catheterized specimen shows macroscopical hemorrhage. Physical examination, of course, always show the point of entrance and the point of exit, if there be one, but no human can tell what damage has been done by the bullet or knife unless celiotomy be performed. Therefore, the only accurate and scientific way to make a diagnosis is by laparotomy. If there be no perforations, the patient has been done very little harm, but if perforations do exist they may be repaired, the patient's life saved, the surgeon's reputation maintained and his conscience unclouded. Procrastination is not only the thief of time, but in

surgical work it may be the murderer. There are very few injuries in which exploratory laparotomy may be dispensed with. For instance, if in the upper right quadrant of the abdomen we have a point of entrance and a wound of exit, and are sure that only the liver has been injured, we may then place our patient in bed, watch his pulse closely, and if it shows that there is no active hemorrhage, we may then dispense with an operation. Our observation of only three cases recently has shown that gunshot wounds of the liver do not bleed very much, and we think that possibly the best treatment of them, if it be a simple perforation, is "masterly inactivity and eternal vigilance." I saw with a colleague a case with four bullet wounds in the liver, and, figuratively, the organ looked very much as though a stick of dynamite had been exploded beneath it; yet the abdominal cavity was barely soiled with blood. Another case was that of a young negro who had been shot from left to right, the bullet entering the left lobe of the liver about 1½ inches from its lower border, grooving it in some places and perforating it in others. He came sixteen miles in a wagon and laparotomy showed a dry wound. The cut surfaces were sutured with cat-gut penetrating the entire liver substance, and he made an uninterrupted recovery. The third case was one in which the bullet entered the seventh interspace on the right and came out behind a little lower and farther out. We were sure the lung had been perforated because the patient coughed up blood, and we were also sure that the liver was the only abdominal viscus injured. The patient was placed in bed, watched closely, and his condition improved so satisfactorily that we deemed it wise not to operate. He made a perfect recovery. The opposite condition exists, however, in wounds of the liver made by cutting instruments. The hemorrhage may be alarming and demands immediate operation.

The only injury to the pancreas which we have seen was due to a bullet wound which entered the back and was associated with a perforation of the left kidney, both walls of the stomach and the liver. The

patient was greatly shocked, but inquired if his assailant was married and if he had children. If so, he did not want him prosecuted. He requested that he be allowed to smoke a cigarette, and gave the address of his mother. The abdomen was found full of blood and most of the hemorrhage was coming from the kidney. When the gastro-colic omentum was opened the lesser peritoneal sac was found full of blood, and a spurting vessel of the pancreas was tied. The perforations of the stomach were quickly repaired and we came out of the abdomen as fast as possible. Saline, etc., was given, but he never completely reacted, and died in about one hour after operation. We have never had a perforation of the spleen, but have had one incised wound of this organ, which was not sufficiently deep to produce much hemorrhage, and therefore the contra-indicated meddling with sutures was not attempted. If hemorrhage had been manifest our only alternative would probably have been splenectomy.

Within the past eighteen months we have had — gunshot wounds of the abdomen, producing perforations of the gut ranging from one to nine. There were — knife wounds perforating the following viscera:

Within the past eighteen months we have had the following injuries to the abdominal viscera: One shotgun perforating wound, which died. Eight shotgun perforating wounds with bullets, four of which required resection. All recovered but one, and his history is given later. Two gunshots of liver, one operated upon and one not operated upon. Both recovered. One penetrating gunshot wound. Three stab wounds of stomach through left interspaces. Four stab wounds of small intestines. One stab wound of ascending and transverse colon. One stab wound of spleen. Three penetrating stab wounds. All stab wounds recovered.

It will be interesting to give the history of some of the cases. There were four gunshot wounds in which the intestines were so badly injured, or the mesentery so badly cut that resection was necessary. One of these was a case of delirium tremens, and it took three men to hold him in the ambu-

lance and upon the operating table before anaesthesia was complete. After the operation we were never able to keep him quiet, and he is the only one who died. All were early cases, reaching the hospital within an hour or so after injury except one—she came eighteen miles by rail and reached the hospital twenty hours after being shot. Her abdomen was rigid and tender, but she recovered. Two cases of perforation were complicated by injury to the bladder, one injury to the bladder was due to a bullet which entered the abdomen one inch above and to the right of the umbilicus. This case demonstrates very conclusively the necessity of catheterization in all cases. Another interesting case was that of a young man who was shot in the right leg, one inch below Poupart's ligament, and the bullet ranging upward passed beneath the ligament exposing the large blood vessels, perforating the head of the caecum to the base of the appendix, perforating the small gut six times and so badly injured the mesentery that a resection was necessary.

You will notice from the statistics that a very favorite place for stab wound is in the left upper quadrant. The combatants clinch, and with the free right hand the knife blade is driven into the abdomen, frequently entering in an interspace. We had one knife wound high up on the cardiac end of the stomach and it was located with difficulty. Another was in the transverse colon concealed in the gastro-colic omentum. As a rule in knife wounds the perforated viscus is directly beneath the wound of entrance, but if it be in the small gut, the coil may move and great care must be exercised in locating them.

The mucous membrane in knife wounds does not turn out as readily as in bullet wounds, and for this reason they may be overlooked. We have also noticed that wounds made by steel-jacketed bullets and buckshot were clean cut and the mucous membrane showed very little tendency to coil out. In two stab wounds of the stomach this viscus remained dilated, and air would not escape even under pressure from without.

In all cases we catheterize the bladder,

shave the abdomen dry and paint with tr. iodine, allowing it to evaporate and soak in while the anaesthetic is being given. We do not wash out the stomach, but prefer that any food in it be regurgitated rather than to take the chance of filling the abdominal cavity with fluid and stomach contents. If this viscus has not been perforated we may wash it out after the operation is complete. We believe, as a rule, the median abdominal incision is preferable, in gunshot wounds, but may occasionally vary this procedure. We do not hesitate to make subsequent incision if it will facilitate matters and allow of a more thorough and satisfactory examination. We believe also that as a rule in stab wounds the perforation is beneath the stab and usually make our incision at this point. After entering the abdominal cavity if we find a large amount of hemorrhage we are practically certain of perforation. I have found that the olfactory sense is a great aid in locating, in a general manner, perforations of the intestines. If we get the odor of escaping gas, we usually find the perforation in the small gut, but if the odor be that of faeces we may expect to find the large gut perforated. After the abdominal cavity is sponged free from blood we pick up the first piece of intestine presenting, and search back to the caecum, and forward to the stomach, clamping all perforations and enfolding them in hot moist gauze. After our search is complete we examine our injured gut and decide upon resection or simple closure of the perforation.

If resection is decided upon, we clamp the gut, take out a triangle of mesentery and control the hemorrhage. A Connell suture of linen is now inserted at the mesentery border, and running this suture continuously around the gut, going through all coats, we complete this part of the anastomosis by suturing the rent in the mesentery with the same thread. We now cover this suture with a Czerney Lembert suture in the peritoneum and reinforce this with cat-gut, if necessary. We are extremely careful to make the sutures approximate but not constrict. We now examine our work, invaginate the bowel through the anasto-

matic ring, and if our thumb and forefinger meet, we are satisfied. If only perforations are to be dealt with, we put in a purse string of linen if it does not constrict the lumen too much, or we suture with a through and through linen and cover this with a Czerney-Lembert of cat-gut or linen. The perforations having been closed, we wash the intestines off with saline and drop them back into the abdominal cavity. The peritoneal cavity is now sponged out with gauze sponges, but we never flush the cavity with any kind of solution. I have sponged away pumpkin seed, tomato skins, faeces and other matter, and have yet to regret that I did not flush the cavity. If there has been much soiling of the peritoneum I place in a drain. No one would be more delighted than I if the drain could be dispensed with, but as yet I have not been sufficiently convinced that it is a useless procedure. I, however, have learned that all drains produce necrosis of the abdominal wall, and for this reason they should always be brought through a separate stab, thus allowing the abdominal incision to heal by first intention and prevent hernia and other complications. The patient is placed in bed in Fowler's position, the Murphy drip is given constantly, and all food and water is withheld for twenty-four hours; purgatives are not given for at least five days. Of course this treatment is not carried out unless we suspect that peritonitis is liable to occur.

While I have done the end to end anastomosis with success, I believe the lateral is safer and may use it hereafter.

DISCUSSION.

Dr. William D. Haggard, Nashville—"I do not think we ought to let a paper like this go by without saying a few words on it. I have rarely listened to a paper that is more complete and accurate than this one, and I feel that we have all profited by listening to it. I recall very well in this city, when the Southern Surgical and Gynecological Association met here in 1896, this subject came up for discussion, and that meeting marked the first crystallization of the expression of immediate abdominal section for every penetrating abdominal wound. It came up in this wise: Dr. Parker, who was then house surgeon at the Charity Hospital, New Orleans, spoke of having seen a large number of these penetrating wounds of the abdomen, and pointed out the great danger of delay and the

mistake in waiting to see whether or not peritonitis developed, as was the old custom, and after reading his paper a motion was made and carried that it was the sense of that body that immediate exploration should be the rule in all cases of gunshot or stab wounds of the abdominal viscera, and from that day, I think, that has been the feeling of most men who are engaged in surgical work. I think if we should fail to do this and peritonitis occurs, which we are powerless to control after eight hours have been permitted to elapse, we will be considered guilty of a grave error, and I have sometimes thought that in the future this might assume a medico-legal aspect and the man who fails to do his surgical duty, perhaps innocently, has been more to blame for the loss of a patient's life than the man who made the mistake of assaulting that patient in a fit of anger. I do not feel that we should shirk our moral responsibility in these cases, to say nothing of the surgical responsibility. As a matter of fact, we have two lives in our hands, the life of the victim and the life of the assailant. I hope the legal fraternity will not take that view, but we ought to take it. I was not prepared to go into an elaborate discussion on this subject, but I wanted to say that much. I think this is an unusual group of cases, nineteen occurring, with such a satisfactory rate of mortality, and the lesson we ought to learn is to suspect every penetrating wound of the abdomen to be a perforating wound and never rest until we see the inside of the abdomen and go over every inch of the viscera, starting at a given point, and going over it systematically, and being able to show whether there is or is not a perforation, and if there is, repair it in accordance with well known surgical principles, and I am an advocate of drainage."

Dr. Jere L. Crook, Jackson—"This paper is one of great value and of exceeding interest to practitioners generally. One remarkable thing in reference to cases of this character which appeals to me is the improved mortality within the last five years. I think the mortality given by Dr. McCabe is very fine considering the kind of cases that came into the hospital. In fact, these patients are nearly always dirty and they are brought in to the hospital under circumstances that are not the best. To show sometimes how we may secure a good result, I wish to recite one case that came under my observation and care recently. The patient, a little boy, very dirty, was playing up in a tree, swinging on the limb, fell from the limb and was impaled on a picket fence. The picket stuck into his abdomen, and a splinter on the picket pierced the intestine, made a small hole, and the boy dropped to the ground, and there were about twenty-four inches of the intestine which came out through this small opening onto the ground in the dirt. There were two holes in the intestine, and the whole thing was eviscerated. The shock was profound, and although the case looked desperate, I surrounded the intestines with hot towels, carried the boy down to my hospital, operated on him, made a large incision, cleaned off the intestines and sewed up the hole in the intestines

The boy never had an untoward symptom afterwards and made a beautiful recovery. However, when I first saw him it looked as though it was a good case for peritonitis. I put in a small drain, which we use in all of these cases, unless there is no soiling of the peritoneal cavity, and we cannot be sure there has not been. The point made by Dr. McCabe, namely, that a stab wound should be used for the drain, is a good one, whether operating for perforation of the intestines or operating in other cases, because if we can make drainage through a separate incision we can get a better result than from draining through the original wound."

Dr. John A. Gaines, Nashville—"I feel that Dr. McCabe's paper only requires felicitation. There is not a point in it that is not well taken, and I simply want to reiterate and emphasize the point that immediate operation is necessary in these cases, and that thorough search of the intestinal canal with drainage should be instituted in most cases, and especially do I endorse what he said with reference to the flushing of the abdomen. I notice that one of our greatest authorities recently on duodenal ulcer, namely, Moynihan, suggests that where we have a perforation, especially where there are beans, lettuce, cabbage and things of that character in the abdominal cavity, there should be another opening made and the abdomen flushed. I do not believe in making another opening and flushing out things of that character. Flushing should not be done. We should pick out all these different things, as flushing only diffuses them, but will not wash them out without flushing the abdomen. And use drainage in all cases of this character. I simply want to congratulate Dr. McCabe on his results, upon the method he has adopted, because it is absolutely ideal, and his results are certainly most gratifying."

Dr. L. L. Sheddan, Knoxville—"I enjoyed very much Dr. McCabe's paper on this subject. I think it is timely. There is one question which he raised in his paper which interested me very much, and that is, he said it makes no difference as to the character of the injury, so far as the surgeon is concerned, whether it be a gunshot or stab wound of the abdomen. It has been my observation that stab wounds are more simple than gunshot wounds, and in closing these perforations a mistake is often made in not going far enough away from the free edge of the wound in order to do this work. I have seen two patients die from that cause. In closing the perforation the peritoneum was not closed to a sufficient distance around the margin of the wound. After gunshot wounds there is likely to be more necrosis follow the injury than from a knife or stab wound. Another thing he spoke of was that injuries of the liver do not bleed so readily. It has been my observation that liver wounds bleed profusely. However, I was very glad to hear what he said about that. I have seen slight injuries of the liver bleed profusely, and if I had a patient with a stab or gunshot wound of the liver, I would not hesitate to open his abdomen to see if I could not con-

trol it. With reference to drainage, I want to speak of a case which occurred in the Lincoln Memorial Hospital in the service of Dr. S. M. Miller. A man was shot five times in the abdomen with a forty-four caliber pistol. There were some fifteen or twenty perforations, which were closed, and the man recovered without drainage. I would have hesitated to have closed this man's abdomen without drainage. The remarks made by Dr. Crook, of Jackson, reminded me of a case that was treated by Dr. Haggard's father. A negro came to our town and told a marvelous story about having his guts cut out on a steamboat on the Cumberland River. He showed me the scar on his abdomen because he had a ventral hernia. He said he was drunk and while in that condition somebody, or another negro, stabbed him and his intestines came out. His intestines lay on the deck all night and froze to the floor. The next morning they poured hot water on them, thawed them out, and subsequently Dr. Haggard's father operated on him and he got well." (Laughter.)

Dr. McCabe, closing—"I wish to thank the gentlemen for their discussion. I believe in all cases of gunshot or stab wounds of the abdomen that the patient should be operated upon immediately. No one can tell what damage has been done by a bullet or knife blade entering the abdomen unless he opens the abdominal cavity and makes an exploration. I do not like a drain, but I put it in as a matter of precaution. I have not reached the point of infallibility and may overlook a perforation. It drains away septic material and if the misfortune should befall one of overlooking a perforation, one's life may be saved by a drain. I agree with Dr. Sheddan that a gunshot wound may produce more shock than a knife wound, but a knife wound because of its smallness and lineal incision may be harder to locate. I believe the mortality in perforating wounds of abdominal viscera has been reduced because of early operation, Fowler's position, Murphy's drip, and because we have ceased to flush the abdominal cavity."

RADIUM.*

BY G. P. EDWARDS, M.D., NASHVILLE.

There are a number of radioactive substances characterized by a reasonably slow period of transformation. These are uranium, thorium, radium, actinium, ionium and radiolead (Radium, D).

Other substances of shorter radioactive life are polonium, radiothorium, mesothorium.

In addition to these, a number of substances—measured in days or weeks—such as radium emanation, radium A, B, C, tho-

rium X, and many others. They are distinguished from radium and like substances by the difference in their period of transformation, and in their chemical and physical properties.

The period of an emanation means the time required for its activity to fall to half value.

All these substances possess a high atomic weight, and the value of 226 places radium in the position of the third known heaviest element.

Uranium is 238 and thorium is 232.

The four characteristic effects of radioactive bodies are:

1. They affect sensitive photographic plates in much the same manner as light.
2. They produce fluorescence.
3. They ionize the air.
4. They produce heat.

Some other effects are: the emission of light, the decomposition of water and various gases, the oxidation of metals in air, the liberation of iodine from iodoform; glass and vitreous bodies are colored violet, and certain physiological and pathological effects are produced.

These effects are due to the rays and emanation given off by the bodies.

There are three kinds of rays, known as alpha, beta, and gamma rays.

The so-called alpha rays are really projectiles thrown off or expelled by the radium. One grain of radium bromide expels, each second, about ten billion particles.

The alpha rays, of four kinds, possess little penetration, being stopped by a sheet of paper or three inches of air.

The beta rays are really not rays, but are a stream of electrons identical in charge and mass with those found in a Crook's tube, but traveling more rapidly. The enormous electric force at the back of the electron in a Crook's tube is quite incompetent to give it the velocity with which it is ejected from radium. Its velocity is 170,000 miles per second—nearly equal to that of light.

A sheet of lead one centimeter thick is required to intercept the beta rays.

One alpha particle is equal in weight to 4,000 beta particles.

Read before Tennessee State Medical Association April 13, 1911.

The gamma ray differs from the others in its greater power of penetration and its non-deflectibility by the most powerful magnetic field. They are fewer in number than the others, but their extraordinary power of penetration gives them peculiar interest. If we place a centigramme of pure radium in a dark room eighteen inches from a fluorescent screen it will become luminous. If we place a sheet of lead one centimeter thick in front of the radium, cutting off the alpha and beta rays, the screen is very little less luminous than before. If we now interpose the human body, the screen is not perceptibly affected. This luminosity is due to the gamma rays alone and they will penetrate sixteen inches of steel.

This is not the case with the X-rays. The most penetrating X-rays would be entirely cut off by the lead sheet alone. This property of the gamma rays is of very great therapeutic value, as it enables us to reach the deepest tissues of the body without harming the skin. If the rays from a radium salt are caused to pass between the poles of a powerful electromagnet, the alpha rays will be slightly bent in one direction, the beta strongly in the opposite, and the gamma will not be deflected at all.

The emanation of radium is being constantly produced, but much more freely when radium is dissolved in water or heated.

The emanation is intensely radioactive—far more so than radium itself. Its period of transformation is four days, and it disappears entirely in thirty days. The emanation is a true gas which can be condensed into a liquid at 150 degrees C.

It belongs to the argon group and is a new radioactive element. It is regarded as being what is left of the radium atom after the alpha particle has been removed.

To obtain the emanation from radium, dissolve a little of the salt in water and add a few drops of hydrochloric acid to keep it in solution, and aspirate the emanation by a current of air into a receiver. This air containing the emanation can be transferred into tubes as required and sealed off for local applications.

The air in the bottle over the radium so-

lution may be extracted as often as required and will be constantly renewed. It may be used therapeutically in various ways. It may be inhaled, injected, taken in draughts, and administered by baths. Many of the national mineral waters are radioactive, and it is to this that the therapeutic value is chiefly due, and for this reason many of them do not retain their virtue when bottled and shipped to consumers. This explains the difficulty of imitating natural mineral waters. They must be rendered radioactive as well as chemically similar.

The emanation may be enclosed in tubes and used in place of the salt, and in the same manner. Its radioactivity is rapidly reduced and reaches one-half strength in four days. Some operators enclose the tube in a lead or silver tube to which is attached a silver ligature or wire for use in the cavities of the body or to be buried by incision in neoplasms. These tubes may be left in situ until exhausted. The metal cuts off all but the hard beta and gamma rays.

When the emanation is injected into the tissues, it diffuses itself and imparts its radioactivity to the cells for a considerable period. In this case the effect is much more pronounced than when used in sealed tubes, for in the latter case nothing but the rays escape, the emanation itself remaining in the tube.

The injection is especially valuable in that it has a predilection for the glands which form an internal secretion, such as the suprarenal capsule. It is eliminated by the lungs, skin and kidneys.

Injections of water, impregnated by the emanation, have been used in lupus, mycosis fungoides and cancers with benefit.

Baths and drinks have been used with most satisfactory results in sciatica, neuritis, gout and chronic articular rheumatism.

The emanation increases the activity of body ferments, facilitating its power of absorption and elimination of inflammatory

The excretion of urea is increased by over 30 per cent. It possesses decided bacteri-processes.

cidal effects on cultures of the gonococcus and staphylococcus.

Large cancerous nodules of the breast and other regions have been injected with emulsions of the insoluble salts resulting in cures.

The crossfire method of injecting the salt under the base of the tumor and applying radium externally so that the growth is between two fires, has been very successful. Salts, in sealed glass tubes, encased in silver tubes with wire attached, are buried in tumors for a given time and then removed. This method is good in well selected cases.

The therapeutic use of radium is based on two chief effects, which it has been found experimentally to possess.

1. A selective destructive action.
2. A general destructive action.

The dose of radium is measured by the amount of the salt, its radioactivity or strength, and the time of exposure. This is expressed in milligramme hours. Thus, one milligramme for five hours or five milligrammes for one hour, would be a five milligramme hour dose, providing the salt is pure or of 2,000,000 radioactivity.

Radium may be mounted for therapeutic purposes in sealed glass tubes, ebonite or other capsules, or mixed with shellac and spread on cloth or metal.

Effects on the Skin of Animals.—If pure radium be applied to the skin for one or two hours without interposing any screen, the skin becomes red in ten days. In twenty days an ulcer is formed, followed by a crust which may fall off in four or five weeks, leaving a soft white cicatrix, or another crust, and sometimes a series of successive crusts may form and be thrown off, covering a period of weeks or months, according to the amount and duration of the exposure.

If the radium be screened by a sheet of lead, five millimeters thick, the skin will not be affected, but the deeper tissues will be influenced by the ultra-penetrating rays.

Effects on the Nervous System.—The toxic effect of radium when placed over nerve centers of mice and guinea-pigs, or rabbits, for long intervals, is to produce such morbid changes as minute hemorrhage

in the brain and cord and degeneration of the endothelium of capillaries, and in severe cases paralysis or tonic convulsions and death.

Effects on the Liver.—When applied through a screen through the abdomen of mice over the liver, the first change is a cloudy swelling, then an early inflammatory action lasting a few days, then there is a late inflammatory action coming on in about fourteen days and lasting much longer.

This was confined to the connective tissue elements, and consisted of a marked general infiltration of the liver with lymphocytes, connective tissue cells and a few polymorphonuclear leucocytes. These changes were associated with general hyperaemia.

This, the probable histological basis of the radium reaction, is confined to the connective tissue elements.

Effects on Human Tissues.—If an un-screened specimen of radium be applied in sufficient dose to the healthy skin, there will be observed in the course of a few days, a red spot which will become slightly raised and a little tender. A few flakes of epithelium may be separated, and a crust resembling impetigo, which may persist for a time, or be thrown off and followed by another, finally falling off and leaving soft, normal skin. If the exposure be too long, an ulcer will form, discharging and crusting and finally leaving a white atrophic scar.

Sometimes telangiectases are produced. Exposures in the neighborhood of the eye, if not carefully shielded, may produce marked congestion of the conjunctiva. This usually subsides without serious trouble. After a reaction has been produced, the spot is more sensitive to subsequent exposures for about two months, indicating the accumulative effect of radium.

Histological Effects.—In lymphadenomas, the free lymphatic cells are destroyed, while the stroma undergoes sclerosis.

In sarcomas, the embryonic tissue becomes converted into fibrous tissue and the blood vessels atrophy and obliterate. A malignant growth of embryonic tissue be-

comes converted into a benign fibroma, which undergoes retrogressive changes and atrophies. In epitheliomas and carcinomas, the cancerous cells are destroyed and evolution is arrested. Immunization by radium has a special interest. If a portion of mouse carcinoma be exposed to the action of radium for a period insufficient to produce any structural change and this fragment be inoculated into other mice, the result is negative.

Experiments have shown that cure of an inoculated growth by radium gives immunity to subsequent inoculations of carcinoma. This immunity is not confined to the part exposed, but extends to the entire body.

Whether this increased resistance is due to the acquisition of antibodies or to some other changes is not stated.

We can undoubtedly accept radium as a cure for rodent ulcer. A profound impression is produced in many instances. Large malignant tumors disappear or are greatly reduced. In advanced cases radium will at least give relief from pain and retard the progress of the disease.

It is the selective destructive action of radium which is its chief value. Its extraordinary penetrating power and the ability to pass through normal intervening tissues unharmed and seek out and destroy the elements more deeply seated, is worthy of our special consideration.

Radium has proved of service in rodent ulcer, angiomas, warty growths, lymphadenomas, malignant growths, leucoplakia, lupus-erythematosus, keloids, tubercular glands, spring catarrh, corneal ulcers, pruritis, syringomyelia, gonorrhoeal rheumatism, rheumatoid arthritis, neuralgia, and catarrhal affections of the respiratory tract.

In rodent ulcer radium certainly acts as a charm. I have had cases in which the X-ray failed utterly to check, melt away and heal promptly under the action of this agent.

It is possible to accurately measure the dosage and secure the most uniform results. I have never observed anything approaching a serious burn such as is produced by the X-ray, and its action can be much more easily limited to the desired area. In my

own personal experience, covering a period of nearly seven years, I have observed its action in a variety of conditions, and have each day increasing confidence in its wonderful virtue. To report in detail these observations would be tiresome, but I shall in a brief summary give you, in part, the results from the use of radium in my own practice.

In thirty-eight cases of cancer of the lip, twelve of which were post-operative, thirty-one were cured, six failed, and one failed to report results.

In seventy-six cases of cancer of the face, nine of which were post-operative, one failed to report, one failed, and seventy-four were cured. Eight recurred, but yielded to treatment.

In seventeen cases of cancer of the eyelids, nine involving mucous margin, six in canthus, two of the skin, all were cured.

In eight cases of cancer of the breast, three failed and five were cured.

In three cases of nipple, one failed and two were cured.

Four cases lupus vulgaris, all cured.

Seven cases lupus erythematosus, six were cured.

Nine cases of cancer involving the buccal spaces, gum, or mouth, resulted in six cures.

Three cases of cancer of the scalp, recovered.

Two cases of cancer of antrum, one recovered.

Six cases cancer in nares, five recovered.

One case of cancer of umbilicus, cured.

Thirteen cases of cancer on the neck, cured.

Six cases of cancer on hand, all cured.

This report does not include cases now under treatment, nor does it include cases where the X-ray was used in conjunction with radium except when the radium was used subsequent to X-ray failure.

DISCUSSION.

Dr. G. C. Savage, Nashville.—"Mr. President, I must ask Dr. Edwards one or two questions about two patients before I proceed with the discussion. You remember, Doctor, the two young men who had sarcoma in the nasopharynx? I know the result in

the first case, but I would like to know the final result in the second."

Dr. Edwards—"From the last report he appeared to be entirely well."

Dr. Savage—"You remember the one who had malignant disease of the auditory canal structures?"

Dr. Edwards—"Yes, he was treated with the X-ray and radium. That case is not reported."

Dr. Savage, resuming—"I want to say that I had already taken my seat in this room before I knew I was to discuss Dr. Edwards' paper. On that account, I can only inadequately refresh my memory concerning the cases which it has been my privilege to place in the hands of Dr. Edwards for treatment by means of radium. All I know about radium itself is that it was discovered by a woman, Mrs. Curie, in collaboration with her husband; and in spite of the greatness of the discovery, she has been debarred from membership in the Academy of Science in Paris because she is a woman, greatly to the shame of that body. The first of the two young men I had under my care referred to a moment ago, I did not think would live six months. He had a malignant growth in the nasopharynx, completely filling that part of his anatomy. It was removed, the operation being the bloodiest I have ever seen. Treatment by radium followed the removal of the growth, and the young man I understand, is well at the end of some eight or ten years. There is nothing under the sky that could have cured him, in my judgment, save radium. The other case was a young man who, with a malignant growth—sarcoma—of the nasopharynx, came under my observation only a year or two after that one. My recollection is he was not operated upon, but radium was used. The young man was bleeding every day, from this malignant growth, to an excess that made it necessary for him to be supported as he was moved about from place to place. He was taken to Dr. Edwards' office and treated. I had lost track of him for the last two or three years, but the last time I heard from him he was fairly robust. He was no longer having these hemorrhages and had free use of his upper respiratory passages when I last saw him. I do not know how many cases I have referred to Dr. Edwards of undoubted malignancy, and not a single one of these has escaped my observation, so far as I recall, as the treatment has progressed. I do not recall but a single one that failed to get a perfect cure. Every one of the lid cases were cured. I have had occasion to refer cases of malignancy to Dr. Edwards in which there were manifestations on the scalp and on other parts of the body, and to me they were undoubted cases of malignancy. So far as my recollection goes now, the scalp and face cases have been cured, and I think his report bears that out. Some of the cases that have come under observation had previously been treated by the X-ray, and not doing well under that treatment, they were put on treatment by radium and progressed towards recovery. I do not know what radium will do, so far as my observation is concerned, for the other conditions mentioned by Dr. Edwards, but if radium has the power over malignancy which has been demonstrated, then it is a God-send to those cases that are a perpetual annoyance to the practitioner. I think it is one of the greatest additions to our medical paraphernalia within my recollection. All honor to the name of Madame Curie, and may she yet live to see that great body of scientific men in Paris humble themselves at her feet, for she has outdone them all. (Applause.)"

Dr. Edwards, closing—"I do not know that I have anything further to say except with regard to Dr. Savage's remarks about Madame Curie being rejected by the Academy of Science of Paris. The reason she was rejected was because she is a woman, and not because she is the discoverer of radium."

COUNTY SOCIETY REPORTERS.

Anderson County—Thos. H. Phillips, M. D., Briceville.
Bedford County—F. B. Reagor, M. D., Shelbyville.
Bradley County—T. E. P. Chambers, M.D., Cleveland.
Campbell County—F. A. McClintock, M. D., Newcomb.
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Fayette County—H. C. Moorman, M. D., Somerville.
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Humphreys County—W. H. Daniel, M. D., McEwen.
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Polk County—F. O. Geisler, M. D., Isabella.
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Wilson County—J. R. Bone, M. D., Lebanon.

THE JOURNAL

OF THE

TENNESSEE STATE MEDICAL ASSOCIATION

Devoted to the Interests of the Medical Profession of Tennessee

Office of Publication, Jackson Building, Nashville, Tenn.

JUNE, 1911.

EDITORIALS**RECENT ADVANCE MADE IN OUR KNOWLEDGE OF SYPHILIS.**

Because of the prevalence of syphilis in all classes of society, its marked effects upon all tissues of the body, its similarity to so many other diseases, its marked activity after many years of latency and its horrible tendency to transmission to the second generation, makes any advance in the knowledge of this disease of great moment to the profession and to the laity.

Since the discovery of the cause of syphilis by Schaudin and Hoffman in 1905, together with the advances in laboratory diagnosis by Wasserman, Noguchi and others, what were formerly merely inferences are now well demonstrated facts and have added more to our knowledge than four centuries of previous clinical study.

These valuable discoveries have not only confirmed former inferences and established them upon a firm scientific basis, but have corrected the garbled and incorrect deductions of the past centuries. As for example, the demonstration of spirochetes in tertiary lesions now prove their infectious nature. We are told that these organisms live in the blood several hours after death, and are warned against infection in doing necropsies upon syphilitic subjects. The knowledge of the cause plus animal experimentation has developed a prophylactic measure of inestimable value (inunctions with calomel ointment) if the public would only be properly educated to its value as a preventative. This abortive prophylactic measure proved effective in the hands of Metchnikoff and Roux as late as eighteen and a half hours after inoculation. It is to be feared that in our enthusiasm over the wonderful discovery by Erlich, that we have overlooked a still more wonderful prophylactic

lactic measure which in its simplicity should appeal to all.

We no longer rely upon a definite three years of treatment with alternate courses of mercury and iodides and dismiss our patients as cured, but have at our command a positive method of determining the value of our medication and the time when our patients may safely dispense with treatment. To almost any observer, it will prove surprising how often the Wasserman test will prove positive even after mercury has been administered internally for several years. In this reaction we possess an accurate method of diagnosing syphilis, a valuable aid in its treatment, and the only method of determining a cure.

The latest advance is the wonderful discovery of Erlich and Hata in the application of organic arsenic to the treatment of this disease. We have already had sufficient time and experience to know that it will not eradicate the infection with a single dose, but that it is a valuable adjunct in the treatment is conceded by all, and it comes as a fitting climax to the recent advances made in the study of a disease which is almost without parallel in the history of medicine.

THE OWEN BILL.

Elsewhere in this issue, we publish in full the bill introduced in the United States Senate by that able champion of medicine, Senator Owen, of Oklahoma. The bill is considerably modified from the one introduced in the Sixtieth Congress, which was made necessary to silence the intense opposition which it created by that enemy of real medical advance, the patent medicine interests plus the various pathies and other so-called scientific bodies.

The bill in its present form, while making concessions in the interest of peace, is nevertheless a real step in advance, we thoroughly endorse its principles and trust that it will pass in the interest of public health.

PURE MILK.

Elsewhere in this issue will be found the very excellent address delivered before the Nashville Academy of Medicine, by Dr.

Henry E. Tuley, of Louisville, Ky., on the subject of "Milk and Its Relation to Infant Mortality." We commend this paper to every reader of the Journal, and trust that other cities will follow the example of Nashville in appointing a good, live, hustling Milk Commission, to take up the subject of pure milk in their respective communities. The commission appointed by the President of the Nashville Academy of Medicine, as a result of the address of Dr. Tuley, is composed of the following gentlemen: Drs. O. H. Wilson, Chairman, W. D. Haggard, A. B. Cooke, W. A. Oughterson, and Newton Evans, all of whom are Nashville's foremost representative professional men, and we feel sure that they will in the near future devise plans not only for the dissemination of knowledge relative to the proper method of securing milk, but that they will devise plans by which it may be obtained.

PUBLIC HEALTH.

The Journal desires that the profession at large be in closer and more intimate touch with affairs relating to the public health than has been the case heretofore. Much good and valuable work is being done by the State, County and City Boards of Health, and we should like to keep the profession posted along these lines if the secretaries of these various Boards will furnish us the data. We acknowledge with pleasure the assistance given us by Dr. Olin West of the State Board and by Drs. Tucker and Hibbett of the Davidson County and City Health Boards.

DEATHS

Dr. Elbert Sevier Miller, of Knoxville, died at his home on King Street on April 12. While his death was not unexpected, yet it cast a gloom over the city of Knoxville and throughout the state when it was announced, for it came as a personal loss to more people in his community than that of any other citizen. Dr. Miller was buried with Masonic honors, being Past Grand High Priest and Past Grand Master of that order in this state. He was a member of the Knox County Medical Society, Tennes-

see State Medical Association and the American Medical Association.

Dr. Humphrey H. Bate, one of the best known and most highly esteemed citizens of Sumner County, died June 13 at his home near Castalian Springs, where he was born in 1844. Dr. Bate, who several years ago was one of the leading physicians of the county, was educated chiefly at Rural Academy. In 1866 he entered the Medical Department of the University of Nashville and graduated in 1868, and after taking another course of lectures commenced practicing medicine in Sumner County, which he continued up to the time his health failed, several years ago. In 1869 he married Miss Martha A. Franklin, of Trousdale County, who died in 1871. On November 25, 1873, he married Miss Nannie D. Simpson, of Tipton, who with two children, Dr. H. Bate, of this county, and Mrs. Anne Brown, of Nashville, survive. At the time of his death Dr. Bate was living on the old Bate farm and in the house that Gov. Bate was born in, it having been built when Tennessee was a part of North Carolina, and which is one of the oldest brick residences in the county and still in a good state of preservation.

NEWS NOTES AND COMMENT

Dr. W. A. Oughterson, of Nashville, is doing special hospital work in the London Hospital during the summer.

The Nashville City Board of Health is now making a crusade against those failing to report births and reportable diseases. One arrest was made last week and prosecuted in the city court. Several are now under observation and data is being collected for early prosecution.

The Metropolitan Life Insurance Company, Nashville branch, will, in the near future, employ two professional nurses to visit the sick among their policy holders for the purpose of educating them along sanitary lines with a view towards reducing the high rate of mortality.

The Nashville City Council recently

passed a bill enabling the City Board of Health to employ a trained nurse to aid in the prevention of the high rate of infant mortality. Mrs. Willie Foster Acree has been elected, and her duties are to instruct mothers in the care of infants, teaching them all of the necessary essentials as to the preparation of milk, prevention of contamination, disposal of excreta, etc. This nurse is at the disposal of the profession and can be secured by telephoning the Health Office.

The Davidson County Board of Health announce the opening of the Davidson County Isolation Hospital for the treatment of contagious diseases. This institution will have fifty-six beds and will care for contagious diseases both from the city and county districts. It is located three miles from the city of Nashville on the isolation grounds and will be under the charge of County Health Officer, Dr. B. G. Tucker, and the City Health Officer, Dr. W. E. Hibbett.

A splendid body of young physicians received their final degree of doctors of medicine on the evening of May 23, in the auditorium of Vanderbilt Medical Department.

A class of thirty-eight were graduated, and in the history of this institution there has never been a more representative body of young men or a class with higher standards of efficiency.

The address of the evening was delivered by Rev. O. C. Brown, Professor of Ecclesiastical History in Vanderbilt University, and was greatly enjoyed by the student body as well as the friends who packed the auditorium.

Dr. W. A. Bryan, representing the Faculty, delivered the Faculty address. Chancellor Kirkland conferred the degrees on the graduates, and Dr. W. L. Dudley, Dean of the Medical Department, presented the Founder's Medal to Dr. Ernest Mitchell Fuqua, of Kentucky.

The following hospital appointments were made: City Hospital, Nashville, Tenn., Dr. E. M. Fuqua, Kentucky; Davidson County Hospital, Nashville, Tenn.; Dr. B. T.

King, Tennessee; Macon City Hospital, Macon, Ga., Dr. J. T. Holmes, Georgia; Providence Hospital, Waco, Tex., Dr. J. B. Rogers, Tennessee.

The following members won, by virtue of the excellence of their examinations in their respective classes, scholarships at Vanderbilt: First Year Class, H. C. Long, Tennessee; Second Year Class, C. C. Applewhite, Mississippi; Third Year Class, A. A. Eggstein, Tennessee.

Dr. Henry Enos Tuley, of Louisville, Ky., who recently delivered an address before the Nashville Academy of Medicine on the subject of "Milk and Its Relation to Infant Mortality," was the guest of Dr. W. D. Haggard while in the city.

It is with pleasure that we correct the erroneous news item which appeared in the May issue of the Journal, which stated that Dr. C. Holtzelaw, of Chattanooga, had gone on a cruise around the world. The doctor does not contemplate going until February. We trust he may have a pleasant voyage.

Dr. A. B. Cooke, who is a delegate to the American Medical Association, which meets at Los Angeles, will leave on the morning of the 21st in L. & N. special sleeper, which will be attached to A. M. A. special at Kansas City on the morning of the 22d. From Kansas City the special will go over the Santa Fe R. R. direct to Los Angeles. On the way the entire train will be switched off at the Grand Canon, Colorado, for a twenty-eight hour stopover, thus giving the entire party an opportunity to visit the greatest of all American scenic wonders.

Dr. Cooke and wife will be at the Hotel Alexandria. They will spend several weeks in California, and on their return will visit Salt Lake City and Yellowstone Park.

Other members of the party will be Dr. Witherspoon, Dr. Burch, wife and son, Dr. Litterer, Dr. Edwards and wife, Dr. J. H. Handly, and several physicians from Atlanta, Ga., Augusta, Ga., and Birmingham, Ala.

Dr. Savage and two daughters will visit

relatives in Texas and will join the party at Trinidad, Colorado.

Dr. and Mrs. S. M. Miller, of Knoxville, after visiting a brother in western Texas, will join the Nashville party at Albuquerque, New Mexico, and accompany them through the Grand Canon to Los Angeles, where the doctor will attend the meeting of the A. M. A. The doctor and Mrs. Miller will return via San Francisco and the Yellowstone Park.

Dr. W. S. Cocke, formerly Assistant Superintendent of the Western Hospital for the Insane, at Bolivar, has resigned his position and gone to Oklahoma, where he will engage in practice.

Dr. Walter Stewart, of Memphis, has been elected Assistant Superintendent of the Western Hospital for the Insane to succeed Dr. W. S. Cocke, who has resigned.

The Middle Tennessee Medical Association, which met at Lewisburg on May 19 and 20, had one of the most interesting and largely attended meetings of its history. The open session, to which the public was invited, attracted a packed house, who were delightfully entertained and instructed by Dr. Geo. Price, who delivered a lecture on tuberculosis, illustrated by views from the stereopticon.

Dr. Roberts impressed upon the audience the necessity for a bill regulating the medical inspection of school children. The doctor is a pioneer in this department of work, and his remarks were well received by all present.

Gallatin was selected as the next place of meeting.

The following officers were elected: President, Dr. R. S. Perry, of Bigbyville; Vice-President, Dr. T. Hilliard Wood, of Nashville; Secretary-Treasurer, Dr. R. L. Jones, of Nashville.

We regret to report the death of Mrs. Dr. N. C. Steele, of Chattanooga, who recently died after a protracted illness.

Drs. W. A. Dietrich, G. Manning Ellis, E. Dunbar Newell, and E. B. Anderson, of

Chattanooga, will attend the Los Angeles meeting of the A. M. A.

Dr. R. N. Taylor, a member of the Chattanooga Society, who recently removed to Alamogordo, N. Mex., for the benefit of his health, we regret to report is not much improved.

The beautiful home of Dr. Y. L. Abernathy, of Hill City, was recently destroyed by fire.

Dr. James H. Atlee, of Chattanooga, contemplates the early removal of his offices from the James Building to his residence at 219 Oak St.

Drs. J. R. Rathmell, J. H. Taylor, N. C. Steele, and M. A. Meacham, of Chattanooga, are moving into the new fifteen-story Hamilton National Bank Building.

MARRIED.

The wedding of Miss Blanche Moore to Dr. R. L. Matthews, of Springfield, Tenn., took place on June 1, at the Methodist Church.

The marriage of Miss Jean Ballenger to Dr. Jas. K. Blackburn, of Pulaski, Tenn., took place at the Highlands Methodist Church, Birmingham, Ala., on June 7, 1911.

SOCIETY PROCEEDINGS

THE TENNESSEE STATE MEDICAL ASSOCIATION.

A complete list of those who have paid Association dues for 1911 will be published in this and occasionally in succeeding numbers of the Journal. The list published below includes only those whose dues were received by the Treasurer up to June 1. Errors in name or address should be reported to Secretary Bromberg at once to facilitate prompt correction.

This list, as published, constitutes the mailing list of the Journal, and any member failing to receive his Journal is requested to write for a duplicate copy. No name has been intentionally left off. If your name does not appear, be kind enough to notify the Secretary, so that he may make the correction.

Name	Address	County
Beasley, E. M.,	Coal Creek	Anderson
Carden, W. L.,	Andersonville	Anderson

Name	Address	County	Name	Address	County
Cox, Joe M., Edgemore	Anderson	Tullos, A. M., Gadsden	Crockett		
Eblin, W. E., Wind Rock	Anderson	Hager, J. F., Isoline	Cumberland		
Ford, E. H., Coal Creek	Anderson	Lewis, V. L., Pres., Crossville	Cumberland		
Hall, S. B., Clinton	Anderson	McCamy, W. R., Crab Orchard	Cumberland		
Haun, L. A., Pres., Coal Creek	Anderson	McClarney, A. J., Crossville	Cumberland		
Hayes, J. T., Oliver Springs	Anderson	Mitchell, E. W., Crossville	Cumberland		
Hicks, H. D., Clinton	Anderson	Southard, Dallas, Sec'y., Crossville	Cumberland		
Lambdin, L., Andersonville	Anderson	Altman, J. T., 702 Church St., Nashville	Davidson		
Morgan, C. H., Pless	Anderson	Anderson, C. F., Eve Bldg., Nashville	Davidson		
Phillips, Thos. H., Sec'y., Briceville	Anderson	Anderson, W. B., Broad and 12th Aves., Nashville	Davidson		
Richards, W. D., Briceville	Anderson	Bailey, Wm., Jackson Bldg., Nashville	Davidson		
Taylor, J. G., Clinton	Anderson	Barr, R. A., 1st Natl. Bank Bldg., Nash- ville	Davidson		
Coble, T. J., Shelbyville	Bedford	Bell, C. Bailey, 135 8th Ave., N., Nash- ville	Davidson		
Dyer, J. H., Wartrace	Bedford	Billington, R. W., Worthington Flats, Nashville	Davidson		
Freeman, J. K., Bellbuckle	Bedford	Black, W. G., 1421 Church St., Nash- ville	Davidson		
Frierson, W. G., Shelbyville	Bedford	Bloomstein, S. M., Worthington Flats, Nashville	Davidson		
Horton, G. E., Pres., Wartrace	Bedford	Briggs, W. T., Cor. Union and 5th Ave., Nashville	Davidson		
Landis, G. L., Unionville	Bedford	Britt, B. E., Jackson Bldg., Nashville	Davidson		
Moody, G. W., Shelbyville	Bedford	Bromberg, Perry, Jackson Bldg., Nash- ville	Davidson		
Moody, S. S., Shelbyville	Bedford	Bryan, W. A., 146 8th Ave., N., Nash- ville	Davidson		
Moon, W. A., Bellbuckle	Bedford	Bryan, O. N., 146 8th Ave., N., Nash- ville	Davidson		
Orr, W. M., Shelbyville, R. F. D. 1	Bedford	Brooks, H. T., 1024 S. 2nd Ave., Nash- ville	Davidson		
Pyatt, W. S., Normandy	Bedford	Brown, C. W., 418 Monroe St., Nashville	Davidson		
Patton, E. W., Flat Creek	Bedford	Brush, C. E., 118 N. 8th Ave., Nashville	Davidson		
Ray, T. R., Normandy	Bedford	Buckner, M. G., Jackson Bldg., Nashville	Davidson		
Robinson, W. T., R. F. D. No. 7, Shelby- ville	Bedford	Buist, W. E., 213 8th Ave., N., Nashville	Davidson		
Reagor, F. B., Sec'y., Shelbyville	Bedford	Burch, L. E., 120 8th Ave., N., Nashville	Davidson		
Sharp, W. T., Shelbyville, R. F. D. 1	Bedford	Caldwell, Robt., Pres., Jackson Bldg., Nashville	Davidson		
Sunstrom, C. A. G., Beech Grove	Bedford	Coles, Van H., 1505 Church St., Nash- ville	Davidson		
Taylor, J. P., Haley	Bedford	Cooke, A. B., Jackson Bldg., Nashville	Davidson		
Woods, T. H., Bellbuckle	Bedford	Cowden, C. N., Eve Bldg., Nashville	Davidson		
Fisher, R. J., Unionville	Bedford	Crockett, S. S., Jackson Bldg., Nashville	Davidson		
Bean, R. L., Cleveland	Bradley	Crawford, J. P., Jackson Bldg., Nashville	Davidson		
Chambers, T. E. P., Sec'y., Cleveland	Bradley	Cullom, M. M., Hitchcock Bldg., Nash- ville	Davidson		
Gates, B. F., Cleveland	Bradley	Dabney, A. S., Eve Bldg., Nashville	Davidson		
Kibler, R. O., Cleveland	Bradley	Dake, Richard W., 216 7th Ave., N., Nashville	Davidson		
McKamy, T. J., Cleveland	Bradley	Davis, M. O., 204 6th Ave., S., Nashville	Davidson		
Quinn, B. A., Cleveland	Bradley	DeWitt, Paul, Eve Bldg., Nashville	Davidson		
Ramsey, G. A., Cleveland	Bradley	Dixon, W. C., Sec'y., 150 8th Ave., N., Nashville	Davidson		
Sullivan, R. T., Cleveland	Bradley	Doak, R. S., 139 8th Ave., N., Nashville	Davidson		
Schultz, H. W., Cleveland	Bradley	Douglas, A. E., Central Hospital, Nash- ville	Davidson		
Speck, C. T., Pres., Cleveland	Bradley	Evans, N. G., 2nd Ave. and Elm., Nash- ville	Davidson		
Shugart, J. L., Cleveland	Bradley	Edwards, G. P., Jackson Bldg., Nashville	Davidson		
Sullivan, W. H., Tasso	Bradley	Eve, Duncan, Eve Bldg., Nashville	Davidson		
Taylor, R. L., Cleveland	Bradley	Eve, Duncan, Jr., Eve Bldg., Nashville	Davidson		
Brown, B. B., Peabody	Campbell	Eve, Paul F., Eve Bldg., Nashville	Davidson		
Gallagher, R. L., Careyville	Campbell	Fort, R. E., 209 7th Ave., N., Nashville	Davidson		
Hefferman, R. L., Jellico	Campbell	Frey, J. H., Edgar Ave., Nashville	Davidson		
Lawson, A. L., Elk Valley	Campbell	Gaines, Jno. A., Jackson Bldg., Nashville	Davidson		
Lane, J. F., Wooldridge	Campbell	Gallagher, J. F., Jackson Bldg., Nash- ville	Davidson		
McClintock, F. A., Sec'y.	Newcomb	George, L., Battle Creek Sanitarium, Nashville	Davidson		
Newman, A. T., Jellico	Campbell	George, W. A., Battle Creek Sanitarium, Nashville	Davidson		
Queener, S. D., Jasboro	Campbell	Glenn, W. F., 1st Natl. Bank Bldg., Nashville	Davidson		
Rose, J. L., Jellico	Campbell				
Robbins, H. M., Jellico	Campbell				
Scott, L. M., Pres., Jellico	Campbell				
Snyder, S. B., Jellico	Campbell				
Bryant, G. C., McLemoresville	Carroll				
Jemison, A. B., Trezevant	Carroll				
McCall, J. W., Huntingdon	Carroll				
Wright, W. M., Huntingdon	Carroll				
Cook, H. W., Alamo	Crockett				
Conyers, D. J., Chestnut Bluff	Crockett				
Dodds, O. L., Eaton	Crockett				
Eason, W. B., Bells	Crockett				
Goodwin, I. L., Halls	Crockett				
Harris, J. H., Bells	Crockett				
James, F. C., Gadsden	Crockett				
Love, C. T., Pres., Alamo	Crockett				
McDonald, S. E., Sec'y., Bells	Crockett				
Oneil, M. E., Bells, R. F. D.	Crockett				
Powell, Jno. L., Friendship	Crockett				
Spence, W. L., Chestnut Bluff	Crockett				

Name	Address	County
Glasgow, McP.,	Worthington Flats, Nashville	Davidson
Gleaves, E. L.,	411½ Union St., Nash- ville	Davidson
Goodwin, J. D.,	1012 1st Natl. Bank Bldg., Nashville	Davidson
Grizzard, R. W.,	302 6th Ave., N., Nash- ville	Davidson
Haggard, W. D.,	148 8th Ave., N., Nash- ville	Davidson
Hale, G. W.,	Wilcox Bldg., Nashville	Davidson
Handley, J. W.,	1st Natl. Bank Bldg., Nashville	Davidson
Hargis, W. A.,	R. R. Del., Hermitage	Davidson
Harris, A. W.,	142 7th Ave., N., Nash- ville	Davidson
Harris, J. E.,	P. O. Box 404, Nashville	Davidson
Harrington, R. A.,	8th Ave. and Broad- way, Nashville	Davidson
Hateher, G. E.,	Cent. Hosp. for Insane, Nashville	Davidson
Head, F. F.,	West Nashville	Davidson
Hibbett, W. E.,	Waverly Place, Nash- ville	Davidson
Hill, C. L.,	Edgar Jones Ave., Nashville	Davidson
Haskins, J. B.,	148 7th Ave., N., Nash- ville	Davidson
Hollabaugh, A. N.,	801 5th Ave., S., Nashville	Davidson
Hubbard, G. W.,	112 Maple St., Nashville	Davidson
Hudson, Alberto,	Jackson Bldg., Nash- ville	Davidson
Jones, R. L.,	151 8th Ave., N., Nashville	Davidson
Keys, Richard,	City Hospital, Nashville	Davidson
Keller, J. P.,	Worthington Flats, Nash- ville	Davidson
King, J. M.,	Eve Bldg., Nashville	Davidson
Lee, W. B.,	Jackson Bldg., Nashville	Davidson
Leonard, N. C.,	140 8th Ave., N., Nash- ville	Davidson
Litterer, William,	Vanderbilt Med. Col., Nashville	Davidson
Levy, Louis,	1st Natl. Bank Bldg., Nash- ville	Davidson
Lee, J. M.,	1107 Sigler St., Nashville	Davidson
McCampbell, W. E.,	6th and Woodland Sts., Nashville	Davidson
McGannon, M. C.,	118 8th Ave., N., Nashville	Davidson
Maddin, J.,	169 4th Ave., N., Nashville	Davidson
McCabe, W. M.,	City Hospital, Nashville	Davidson
Magan, Lillian E.,	Madison	Davidson
Marr, Harrington,	Mill Block, Church, Nashville	Davidson
Meadows, Joe T.,	1st Natl. Bank Bldg., Nashville	Davidson
Miller, J. P.,	208 8th Ave., N., Nashville	Davidson
Morgan, H. W.,	211 6th Ave., N., Nash- ville	Davidson
Moore, J. W.,	146 8th Ave., N., Nash- ville	Davidson
Morrison, W. J.,	8th Ave. and Commerce, Nashville	Davidson
Minor, Dabney,	1201 Broadway, Nash- ville	Davidson
Neil, D. R.,	Jackson Bldg., Nashville	Davidson
Nichol, A. G.,	Jackson Bldg., Nashville	Davidson
Noel, L. G.,	529½ Church St., Nashville	Davidson
O'Callahan, W. J.,	Post Office, Nashville	Davidson
Overton, John,	Douglas Infirmary, Nash- ville	Davidson
Oughterson, W. A.,	135 8th Ave., N., Nashville	Davidson
Owsley, J. Q.,	420½ Union St., Nash- ville	Davidson

Name	Address	County
Omohundro, O. C.,	Nashville	Davidson
Padgett, Hazle,	Hitchcock Bldg., Nash- ville	Davidson
Pickens, D. R.,	135 8th Ave., N., Nash- ville	Davidson
Plunkett, J. D.,	701½ Church St., Nash- ville	Davidson
Pollard, T. G.,	135 8th Ave., N., Nash- ville	Davidson
Price, Geo. H.,	146 8th Ave., N., Nash- ville	Davidson
Parrish, W. A.,	Campbellville, Fla.	Davidson
Roberts, Deering J.,	208 6th Ave., N., Nashville	Davidson
Robertson, C. A.,	151 8th Ave., N., Nash- ville	Davidson
Roberts, E. L.,	131 8th Ave., N., Nash- ville	Davidson
Sharber, A. L.,	142 7th Ave., N., Nash- ville	Davidson
Sanders, E. M.,	148 7th Ave., N., Nash- ville	Davidson
Savage, G. C.,	139 8th Ave., N., Nashville	Davidson
Shannon, T. G.,	Woodland and 4th, Nashville	Davidson
Sifford, W. R.,	1st Natl. Bank Bldg., Nashville	Davidson
Smith, Larkin,	131 8th Ave., N., Nash- ville	Davidson
Stevens, Jno. W.,	R. F. D. 1, Nashville	Davidson
Stonestreet, Reginald,	Hitchcock Bldg., Nashville	Davidson
Sullivan, C. C.,	131 8th Ave., N., Nash- ville	Davidson
Sumpter, W. D.,	131 8th Ave., N., Nash- ville	Davidson
Sneed, W. L.,	Station B., Nashville	Davidson
Shoulders, H. H.,	Nashville	Davidson
Tankesley, W. H.,	Waverly Place, Nashville	Davidson
Teachout, S. R.,	702 Church St., Nash- ville	Davidson
Tigert, H. M.,	Worthington Flats, Nash- ville	Davidson
Trawick, G. C.,	210 6th Ave., N., Nash- ville	Davidson
Tucker, B. G.,	302 S. 10th St., Nashville	Davidson
Tucker, R. O.,	Worthington Flats, Nash- ville	Davidson
Thach, A. B.,	148 7th Ave., N., Nashville	Davidson
Tidwell, G. W.,	131 8th Ave., N., Nash- ville	Davidson
Weaver, Thos.,	Jackson Bldg., Nashville	Davidson
West, Olin,	Worthington Flats, Nash- ville	Davidson
White, Geo. R.,	24 Bridge Ave., Nash- ville	Davidson
White, Gordon,	610½ Church St., Nash- ville	Davidson
Wilson, O. H.,	Worthington Flats, Nash- ville	Davidson
Witherspoon, Jno. A.,	150 8th Ave., N., Nashville	Davidson
Witt, W. H.,	Worthington Flats, Nash- ville	Davidson
Wood, T. Hillard,	1st Natl. Bank Bldg., Nashville	Davidson
Loring, Chas.,	Smithville	DeKalb
Potter, T. J.,	Pres., Smithville	DeKalb
Parker, W. B.,	Seey., Smithville	DeKalb
Parker, W. W.,	Smithville	DeKalb
Flowers, J. C.,	Dickson	Dickson
Guerin, H. C.,	Dickson	Dickson
Harper, T. M.,	Dickson	Dickson
Scott, W. S.,	Dickson	Dickson

Name	Address	County	Name	Address	County
Suggs, W. J., Pres., Dickson	Dickson	Dickson	Akers, R. M., Nero, Ky.	.....	Grainger
Walker, W. W., Secy., Dickson	Dickson	Dickson	Atkins, C. A., Powder Springs	.....	Grainger
Weaver, H., Dickson	Dickson	Dickson	Campbell, J. H., Rutledge	.....	Grainger
Brewer, J. D., Newbern	Dyer	Dyer	Idol, Willis, Leas Springs	.....	Grainger
Cherry, E. O., Newbern	Dyer	Dyer	Idol, E. T., Washburn	.....	Grainger
Dulaney, O., Pres., Dyersburg	Dyer	Dyer	LeQuire, G. D., Rutledge	.....	Grainger
Edwards, Luther, Finley	Dyer	Dyer	Livingston, G. W., Nocton	.....	Grainger
Flanary, D. L., Dyersburg	Dyer	Dyer	Neergaard, F. A., Rutledge	.....	Grainger
Fowlkes, J. A., Dyersburg	Dyer	Dyer	Pierce, J. W., Pres., Tate Springs	.....	Grainger
Haskins, E. T., Newbern	Dyer	Dyer	Wallace, R. M., Rutledge	.....	Grainger
Hicks, H. E., Newbern	Dyer	Dyer	Britton, F. C., Greenville, R. F. D. 9	.....	Green
Holland, W. W., Dyersburg	Dyer	Dyer	Brumley, S. T., Greenville, R. F. D.	.....	Green
McDavid, Paul, Menglewood	Dyer	Dyer	Bailey, G. N., Baileyton	.....	Green
Morgan, G. D., Lane	Dyer	Dyer	Brown, I. B., Mosheim, R. F. D.	.....	Green
Moody, A. H., Secy., Dyersburg	Dyer	Dyer	Borden, H. S., Greenville, R. F. D. 2	.....	Green
Price, J. G., Dyersburg	Dyer	Dyer	Bell, Jas. B., Pres., Greenville, R. F. D. 2	.....	Green
Rawles, E. L., Dyersburg	Dyer	Dyer	Blanton, M. A., Secy., Baileyton, R. F. D. 1	.....	Green
Rawles, I. N., Dyersburg	Dyer	Dyer	Cloyd, J. W., Mosheim	.....	Green
Turner, C. A., Dyersburg	Dyer	Dyer	Fox, C. P., Greenville	.....	Green
Walker, N. S., Dyersburg	Dyer	Dyer	Hays, G. S., Greenville	.....	Green
Walker, T. J., Dyersburg	Dyer	Dyer	Hawkins, W. H., Greenville	.....	Green
Watson, W. P., Dyersburg	Dyer	Dyer	Huffaker, R. O., Chucky City	.....	Green
Wynne, J. W., Newbern	Dyer	Dyer	Holt, J. S., Midway	.....	Green
Albright, J. A., Somerville	Fayette	Fayette	Jeffers, W. L., Baileyton	.....	Green
Boals, A. O., Pres., Somerville	Fayette	Fayette	Myers, E. M., Bulls Gap	.....	Green
Crook, C. N., Somerville	Fayette	Fayette	Ruble, H. H., Greenville	.....	Green
Moorman, H. C., Secy., Somerville	Fayette	Fayette	Robinson, F. P., Greenville, R. F. D.	.....	Green
Robertson, C. W., Somerville	Fayette	Fayette	Simpson, H. A., Afton, R. F. D.	.....	Green
Bennett, B. T., Trenton	Gibson	Gibson	Taylor, Wm. B., Greenville	.....	Green
Clopton, A. T., Milan	Gibson	Gibson	Taylor, H. M., Greenville	.....	Green
Caldwell, B. D., Milan	Gibson	Gibson	Woolsey, Thos. H., Greenville, R. F. D.	.....	Green
Dodds, G. W., Trenton	Gibson	Gibson	Wilhoit, J. S. J., Afton, R. F. D.	.....	Green
Faucett, J. T., Trenton	Gibson	Gibson	Woodyard, S. W., Greenville	.....	Green
Hunt, R. H., Humboldt	Gibson	Gibson	Bales, Thos. E., Morristown	.....	Hamblen
Harwood, T. E., Trenton	Gibson	Gibson	Brown, J. H., Talbott	.....	Hamblen
McRee, W. C., Secy., Trenton	Gibson	Gibson	Cass, H. M., Morristown	.....	Hamblen
Moore, J. C., Trenton	Gibson	Gibson	Dice, J. B. F., Morristown	.....	Hamblen
Medling, W. L., Dyer	Gibson	Gibson	Henderson, P. L., Morristown	.....	Hamblen
Matthews, E. C., Trenton	Gibson	Gibson	Howell, W. E., Morristown	.....	Hamblen
Penn, B. S., Pres., Humboldt	Gibson	Gibson	Manard, J. J., Morristown	.....	Hamblen
Penn, G. W., Humboldt	Gibson	Gibson	Manker, E. A., Whitesburg	.....	Hamblen
Preston, J. H., Humboldt	Gibson	Gibson	Milligan, L. H., Morristown	.....	Hamblen
Preston, W. F., Humboldt	Gibson	Gibson	Painter, F. F., Morristown	.....	Hamblen
Paris, Jno. C., Kenton	Gibson	Gibson	Pangle, H. G., Russellville	.....	Hamblen
Oliver, G. W., Medina	Gibson	Gibson	Ruble, W. G., Morristown, Secy.	.....	Hamblen
Rozelle, J. H., Gibson	Gibson	Gibson	Shields, D. E., Morristown, Pres.	.....	Hamblen
Thompson, Sidney, Humboldt	Gibson	Gibson	Walker, I. D., Alpha	.....	Hamblen
Walker, D. A., Trenton	Gibson	Gibson	Woods, J. O., Morristown	.....	Hamblen
Wyatt, F. E., Yorkville	Gibson	Gibson	Abernathy, Thos. E., Bates Block, Chattanooga	.....	Hamilton
Tyree, C. E., Trenton	Gibson	Gibson	Allen, Benj. G., 212 8th St., Chattanooga	.....	Hamilton
Abernathy, C. A., Pulaski	Giles	Giles	Anderson, E. B., 739 Market St., Chattanooga	.....	Hamilton
Abernathy, W. D., Pulaski	Giles	Giles	Anderson, E. C., Highland Park Station, Chattanooga	.....	Hamilton
Abernathy, Shields, Secy., Pulaski	Giles	Giles	Anderson, W. E., James Bldg., Chattanooga	.....	Hamilton
Allen, A. M., Buford Station	Giles	Giles	Applegate, W. A., 300 Pennsylvania Ave., Chattanooga	.....	Hamilton
Baugh, Jno. E., Elkton	Giles	Giles	Atlee, Jas. H., Pres., 219 Oak St., Chattanooga	.....	Hamilton
Black, Wm. E., Minor Hill	Giles	Giles	Banks, W. A., 313 Chamberlain Ave., Chattanooga	.....	Hamilton
Blackburn, Jas. K., Pulaski	Giles	Giles	Barker, H. M., Alton Park	.....	Hamilton
Butler, Geo. D., Pulaski	Giles	Giles	Bell, Jas. T., Daisy, Tenn.	.....	Hamilton
Cole, Wm. H., Minor Hill	Giles	Giles	Berlin, Henry, 110 McCollie Ave., Chattanooga	.....	Hamilton
Copeland, W. F., Campbellsville	Giles	Giles	Blackwell, O. L., Worley	.....	Hamilton
Dean, Allen W., Brick Church	Giles	Giles	Bogart, W. G., 518 Georgia Ave., Chattanooga	.....	Hamilton
Freeman, E. C., Pulaski	Giles	Giles	Bogart, W. M., Hill City, Tenn.	.....	Hamilton
Grimes, G. C., Bodenham	Giles	Giles	Brooks, J. C., Voight's Drug Store, Chattanooga	.....	Hamilton
Harris, Jno. S., Minor Hill	Giles	Giles	Broyles, J. N., East Lake	.....	Hamilton
Herbert, Robt. N., Aspen Hill	Giles	Giles			
Lancaster, A. J., Pisgah	Giles	Giles			
Lancaster, Geo. W., Pisgah	Giles	Giles			
LaRue, Jas. A., Pulaski	Giles	Giles			
May, J. P., Pres., Aspen Hill	Giles	Giles			
Marris, John H., Jr., Bodenham	Giles	Giles			
Neal, J. R., Wales Station	Giles	Giles			
Sumpter, E. R., Pulaski	Giles	Giles			
Woodard, B. H., Elkton	Giles	Giles			
Whitfield, Thomas, Veto, Ala.	Giles	Giles			
Acuff, P. H., Secy., Washburn	Grainger	Grainger			

Name	Address	County	Name	Address	County
Byrd, E. H., East Chattanooga		Hamilton	Taylor, J. H., 707 Market St., Chat- tanooga	.....	Hamilton
Calhoun, Jno. D., Guild		Hamilton	Travis, B. F., Chattanooga	.....	Hamilton
Cleary, A. D., 602 Georgia Ave., Chat- tanooga		Hamilton	Wylie, C. B., Bates Block, Chattanooga	.....	Hamilton
Cunningham, J. C., Hixson		Hamilton	Wagner, M. M., Guild	.....	Hamilton
Davis, K. D., Wehl Bldg., Chattanooga		Hamilton	Wert, B. S., 5 E. 8th St., Chattanooga	.....	Hamilton
Dietrich, W. A., Miller Bldg., Chat- tanooga		Hamilton	West, Geo. R., 10 W. 8th St., Chat- tanooga	.....	Hamilton
Dye, J. S., 52 8th St., Chattanooga		Hamilton	Williams, G. V., James Bldg., Chat- tanooga	.....	Hamilton
Eblen, Thos. N., Tyner		Hamilton	Williamson, L. C., East Lake	.....	Hamilton
Ellis, C. C., Central Block, Chattanooga		Hamilton	Wilson, H. B., James Bldg., Chattanooga	.....	Hamilton
Ellis, G. M., 211 E. 8th St., Chattanooga		Hamilton	Wise, E. B., 739 Market St., Chattanooga	.....	Hamilton
Fancher, U. L., James Bldg., Chat- tanooga		Hamilton	Woolford, J. S. B., "The Highland," Chat- tanooga	.....	Hamilton
Fowler, S. A., 1100 Whiteside St., Chat- tanooga		Hamilton	Woolner, A. B., 223 E. 8th St., Chat- tanooga	.....	Hamilton
Gentry, J. A., Times Bldg., Chattanooga		Hamilton	Yarnell, S. T., Loveman Bldg., Chat- tanooga	.....	Hamilton
Gibbs, Vaulx, 831½ Market St., Chat- tanooga		Hamilton	Zeigler, T. J., Chattanooga	.....	Hamilton
Goodwin, J. L., 211 E. 8th St., Chat- tanooga		Hamilton	Clifton, Joe, Hickory Valley	.....	Hardeman
Graham, C. G., 716 Market St., Chat- tanooga		Hamilton	Curry, G. B., Toone	.....	Hardeman
Green, Jas. E., 226½ E. Main St., Chat- tanooga		Hamilton	Cocke, W. S., Hugo, Okla.	.....	Hardeman
Hale, B. C., Guild		Hamilton	Dorris, H. E., Bolivar	.....	Hardeman
Hanna, J. E., Loveman Bldg., Chat- tanooga		Hamilton	Goddard, W. L., Sanlsbury	.....	Hardeman
Hoghead, J. M., 602 Georgia Ave., Chat- tanooga		Hamilton	Milstead, H. W., Bolivar	.....	Hardeman
Holtzclaw, C., 213 E. 8th St., Chat- tanooga		Hamilton	Neely, J. J., Bolivar	.....	Hardeman
Hope, W. T., 101½ E. 8th St., Chat- tanooga		Hamilton	Sassar, J. D., Sr., Pres., Middleton	.....	Hardeman
Horton, J. W., James Bldg., Chattanooga		Hamilton	Tate, Robt. W., Secy., Bolivar	.....	Hardeman
Hughes, O. G., Ooltewah		Hamilton	Allen, Jno. T., Brownsville	.....	Haywood
James, Thos. L., Orme		Hamilton	Cooper, Thos. W., Brownsville	.....	Haywood
Larimore, H. P., Secy., Bates Block, Chattanooga		Hamilton	Dickson, A. C., Brownsville, R. F. D.	.....	Haywood
Martin, C. R., Chattanooga		Hamilton	Edwards, Jos. L., Secy., Brownsville	.....	Haywood
McGhee, John B., 222½ E. Main St., Chattanooga		Hamilton	Heard, F. C., Brownsville, R. F. D.	.....	Haywood
Meacham, M. A., Loveman Bldg., Chat- tanooga		Hamilton	Norvelle, J. C., Brownsville	.....	Haywood
Morris, D. C., Chattanooga		Hamilton	Patton, J. S., Pres., Brownsville	.....	Haywood
Newell, E. T., 707 Georgia Ave., Chat- tanooga		Hamilton	Sorrell, A. H., Brownsville	.....	Haywood
Newell, E. D., 707 Georgia Ave., Chat- tanooga		Hamilton	Sevier, A. H., Brownsville	.....	Haywood
Nefe, A. A., Lookout Mountain		Hamilton	Smthers, William, Brownsville, R. F. D.	.....	Haywood
Null, H. O., Ridgedale		Hamilton	Wilkinson, J. B., Brownsville	.....	Haywood
Partridge, Jas., Loveman Bldg., Chat- tanooga		Hamilton	Warren, J. W., Forked Deer	.....	Haywood
Rathmell, J. R., 5 E. 9th St., Chat- tanooga		Hamilton	Arnold, J. M., Lexington	.....	Henderson
Reisman, E. E., 5 E. 9th St., Chat- tanooga		Hamilton	Davidson, R. H., Lexington	.....	Henderson
Richardson, R. M., Guild		Hamilton	England, J. H., Luray	.....	Henderson
Richmond, Jos. A., Harrison, Tenn.		Hamilton	Howell, W. I., Wildersville	.....	Henderson
Ryan, Geo. F., 426 Market St., Chat- tanooga		Hamilton	Huntsman, W. F., Lexington	.....	Henderson
Selden, J. M., 5 E. 9th St., Chattanooga		Hamilton	Johnston, C. H., Secy., Lexington	.....	Henderson
Spradling, L. W., 5 E. 9th St., Chat- tanooga		Hamilton	Keeton, W. B., Scotts Hill	.....	Henderson
Stapp, Fred B., 9½ E. 8th St., Chat- tanooga		Hamilton	Parker, S. T., Lexington	.....	Henderson
Steele, Jno. B., James Bldg., Chat- tanooga		Hamilton	Stinson, J. C., Center Point	.....	Henderson
Steele, N. C., Loveman Bldg., Chat- tanooga		Hamilton	Waller, A. L., Juno	.....	Henderson
Stem, L. T., East Lake, Tenn.		Hamilton	Watson, W. T., Lexington	.....	Henderson
Sullivan, Bayard, 5 E. 9th St., Chat- tanooga		Hamilton	Wyley, J. C., Scotts Hill	.....	Henderson
Tatum, R. H., 826 Market St., Chat- tanooga		Hamilton	Abernathy, G. T., Paris	.....	Henry
			Grainger, R. A., Paris	.....	Henry
			McSwain, J. H., Secy., Paris	.....	Henry
			McSwain, O. A., Paris	.....	Henry
			Paschal, A. F., Crossland	.....	Henry
			Perry, R. J., Springville	.....	Henry
			Rodgers, C. W., Pres., Como	.....	Henry
			Batton, J. A., Coble	.....	Hickman
			Beasley, Jno. S., Centreville	.....	Hickman
			Beasley, R. P., Secy., Centreville	.....	Hickman
			Cage, W. D., Coble	.....	Hickman
			Cooper, J. D., Sunrise	.....	Hickman
			Flowers, D. W., Little Lot	.....	Hickman
			Stephenson, C. V., Centreville	.....	Hickman
			Webb, J. B., Goodrich	.....	Hickman
			Binkley, D. C. K., Hustburg	.....	Humphreys
			Cooley, J. T., Waverly	.....	Humphreys
			Coke, F. H., Hnstbnrg	.....	Humphreys
			Daniel, W. H., Secy., McEwen	.....	Humphreys
			Gould, H. F., Pres., Hnstburg	.....	Humphreys
			Horner, W. B., Plant	.....	Humphreys
			Slayden, W. W., Waverly	.....	Humphreys

Name	Address	County	Name	Address	County
Smith, J. N., Cuba Landing.....	Humphreys	McReynolds, R. L., Knoxville.....	Knox		
Sugg, J. A., McEweu.....	Humphreys	Miller, J. E., Rogersville.....	Knox		
Teas, J. J., Waverly.....	Humphreys	Miller, S. M., 209 W. Church Ave., Knoxville.....	Knox		
Hix, J. B., Flynn's Lick.....	Jackson	Miller, S. R., Box 743, Knoxville.....	Knox		
Loftis, H. P., Pres., Gainesboro.....	Jackson	Newman, W. S., 406 W. Church Ave., Knoxville.....	Knox		
Mabry, E. W., Secy., Gainesboro.....	Jackson	Richmond, W. D., Empire Bldg., Knoxville.....	Knox		
Quarles, J. D., Whitleyville.....	Jackson	Ristine, C. E., Box 75, Knoxville.....	Knox		
Reeves, C. E., Gainesboro.....	Jackson	Rule, A. L., Box 612, Knoxville.....	Knox		
Anderson, J. C., Pres., Dandridge.....	Jefferson	Rogers, K. E., Cherokee Bldg., Knoxville.....	Knox		
Cline, B. E., Strawberry Plains.....	Jefferson	Rogers, J. W., Knoxville.....	Knox		
Caldwell, J. M., Jefferson City.....	Jefferson	Shedd, L. L., 419 W. Church Ave., Knoxville.....	Knox		
Cooper, W. S., White Pine.....	Jefferson	Sisk, J. A., Empire Bldg., Knoxville.....	Knox		
Dukes, N. M., Strawberry Plains.....	Jefferson	Swaney, O. M., Treadway.....	Knox		
French, T. R., Dandridge.....	Jefferson	Tillery, J. P., 419 W. Church Ave., Knoxville.....	Knox		
Huggins, J. I., Secy., Dandridge.....	Jefferson	Vance, W. K., Bristol.....	Knox		
King, W. F., Jefferson City.....	Jefferson	Wallace, W. L., N. Broadway, Knoxville.....	Knox		
Roberts, W. E., Talbott.....	Jefferson	West, J. Q. A., Arnstein Bldg., Knoxville.....	Knox		
Tadlock, W. L., Talbott.....	Jefferson	West, W. J., Empire Bldg., Knoxville.....	Knox		
Tittsworth, B. M., Jefferson City.....	Jefferson	White, W. H. L., Young Bldg., Knoxville.....	Knox		
Tinsley, P. A., Dandridge.....	Jefferson	Wilder, Dora Lee, R. F. D. No. 1, Knoxville.....	Knox		
Tar, H. L., Jefferson City.....	Jefferson	Williams, D. H., 613 Walnut St., Knox- ville.....	Knox		
Walker, Jas. H., White Pine.....	Jefferson	Young, B. F., Box 633, Knoxville.....	Knox		
Wagner, P. L., New Market.....	Jefferson	Zemp, E. R., Box 349, Knoxville.....	Knox		
Acuff, S. D., 1314 Central Ave., Knoxville.....	Knox	Adams, Jno. D., Bessie.....	Lake		
Atchley, W. P., Empire Bldg., Knoxville.....	Knox	Alexander, W. S., Ridgely.....	Lake		
Armstrong, W. H., Rogersville.....	Knox	Alexander, J. D., Secy., Tiptonville.....	Lake		
Austin, W. S., Knoxville, Box 5521.....	Knox	Griffin, J. T., Tiptonville.....	Lake		
Alexander, Eben, Box 563, Knoxville.....	Knox	Griffin, R. B., Ridgely.....	Lake		
Booker, G. W., The Oxford, Knoxville.....	Knox	Griffin, R. W., Tiptonville.....	Lake		
Blankenship, J. P., W. Church Ave., Knoxville.....	Knox	Hellen, R. E., Ridgely.....	Lake		
Bosworth, B. D., Maryville.....	Knox	Kelty, E. T., Cronansville.....	Lake		
Boyd, S. B., Box 115, Knoxville.....	Knox	Smith, A. P., Ridgely.....	Lake		
Bowen, Wm., Broad & Central, Knoxville.....	Knox	Wright, J. M., Pres., Tiptonville.....	Lake		
Bull, C. G., Medical College, Knoxville.....	Knox	Lackey, W. K., Ripley.....	Lauderdale		
Campbell, Michael, Lyonsview, Knoxville.....	Knox	Lackey, J. B., Ripley.....	Lauderdale		
Carmichael, C. J., Walnut St., Knoxville.....	Knox	Lewis, J. H., Secy., Ripley.....	Lauderdale		
Carmichael, J. W., Walnut St., Knoxville.....	Knox	Lusk, G. A., Ripley.....	Lauderdale		
Casenburg, S. F., McTannen Bldg., Knoxville.....	Knox	Miller, W. D., Pres., Ripley.....	Lauderdale		
Cates, B. B., 508 W. Clinch Ave., Knoxville.....	Knox	Miller, T. E., Ripley.....	Lauderdale		
Cochran, W. R., 721 Walnut St., Knoxville.....	Knox	Miller, Thos., Halls.....	Lauderdale		
Copenhaver, M. M., Lonsdale.....	Knox	Massengill, A. P., Halls.....	Lauderdale		
Christenbery, H. E., Lonsdale.....	Knox	Kellner, T. B., Ripley.....	Lauderdale		
Cullman, John, Jr., W. Church Ave., Knoxville.....	Knox	Osteen, J. R., Ashport.....	Lauderdale		
Depree, R. V., Medical College, Knoxville.....	Knox	Porter, J. A., Ripley.....	Lauderdale		
Davis, Chas. Huff, Box 674, Knoxville.....	Knox	Sandford, J. W., Ripley.....	Lauderdale		
Deaderick, Chalmers, 501 W. Church Ave., Knoxville.....	Knox	Sandford, W. C., Henning.....	Lauderdale		
DeArmond, C. C., Empire Bldg., Knoxville.....	Knox	Sharpe, S. B., Henning.....	Lauderdale		
Frayser, B. H., Knoxville.....	Knox	Tucker, W. H., Halls.....	Lauderdale		
Fritzgerald, T. F., R. F. D. No 1, Knox- ville.....	Knox	Walker, C. B., Ripley.....	Lauderdale		
Garrison, A. R., Byington.....	Knox	Anderson, J. M., Fayetteville.....	Lincoln		
Greer, W. A., Ledgewick Bldg., Knoxville.....	Knox	Ashley, T. E., Fayetteville, R. F. D. No 1.....	Lincoln		
Hill, O. W., Cherokee Bldg., Knoxville.....	Knox	Blair, E. K., Fayetteville.....	Lincoln		
Holloway, V. D., 609 Walnut St., Knoxville.....	Knox	Brock, B. B., Blanche.....	Lincoln		
Jones, E. L., Ledgewick Bldg., Knoxville.....	Knox	Farrar, J. P., Fayetteville, R. F. D., No. 8.....	Lincoln		
Jones, T. R., Walnut St., Knoxville.....	Knox	Canuon, W. F., R. F. D. 5, Fayetteville.....	Lincoln		
Jones, S. L., Knoxville.....	Knox	Cullum, J. M., Fayetteville.....	Lincoln		
Jones, C. B., Box 139, Knoxville.....	Knox	Farrar, J. P., Fayetteville, R. F. D. No 1.....	Lincoln		
Kelso, H. J., 425 W. Church Ave., Knoxville.....	Knox	Forbes, E. C., Howell.....	Lincoln		
Kabler, W. F., Bristol.....	Knox	Gilliam, L. H., Kelso.....	Lincoln		
Kennedy, J. M., N. Central, Knoxville.....	Knox	Goodrich, C. L., Fayetteville.....	Lincoln		
Kern, A. G., Box 405, Knoxville.....	Knox	Graham, J. T., Mulberry, R. F. D. No. 1, Lincoln			
Kincaid, J. H., 421 W. Church Ave., Knoxville.....	Knox	Holland, E. F., Fayetteville, R. F. D. No. 1, Lincoln			
Kyle, A. G., Deaderick Bldg., Knoxville.....	Knox	Joplin, W. S., Petersburg.....	Lincoln		
Luttrell, Walter, 504 Asylum, Knoxville.....	Knox	McRady, S. F., Petersburg.....	Lincoln		
Lones, C. E., McTownlee Bldg., Knoxville.....	Knox	McWilliams, J. M., Fayetteville.....	Lincoln		
Lynn, W. N., L. M. Hospital, Knoxville.....	Knox	Noblett, B. E., Pres., Fayetteville.....	Lincoln		
McCampbell, H. H., 614 Walnut St., Knoxville.....	Knox	Patrick, T. A., Secy., Fayetteville.....	Lincoln		
McCown, R. M., W. Church Ave., Knoxville.....	Knox	Shelton, J. M., Kelso, R. F. D. No 1.....	Lincoln		
McNabb, C. P., 904 S. Gay St., Knoxville.....	Knox	Sloan, J. E., Harms, R. F. D. No 1.....	Lincoln		
		Summers, W. P., Harms, R. F. D. No 1.....	Lincoln		
		Wyatt, J. M., Fayetteville.....	Lincoln		

Name	Address	County	Name	Address	County
Yearwood, A. L., Fayetteville.....	Lincoln	Williamson, J. G., Jr., Columbia.....	Maury		
Burditt, G. M., Lenoir City.....	Loudon	Williamson, J. G., Sr., Columbia.....	Maury		
Eblin, J. G., Lenoir City.....	Loudon	Basinger, Jno. L., Riceville.....	McMinn		
Font, W. T., Lenoir City.....	Loudon	Brendle, D. P., Englewood.....	McMinn		
Harrison, J. J., Loudon.....	Loudon	Buttraw, W. H., Niota.....	McMinn		
Hickman, T. J., Secy., Lenoir City.....	Loudon	Copenhaver, L. A., Englewood.....	McMinn		
Leiper, J. T., Pres., Lenoir City.....	Loudon	Center, H. E., Etowah.....	McMinn		
Pagett, W. D., Lenoir City.....	Loudon	Creech, Richard, Englewood.....	McMinn		
Arnold, Jno., M., Jackson.....	Madison	Force, J. O., Athens.....	McMinn		
Blackmon, Jno., A., Jackson.....	Madison	Fronyberger, W. R., Pendergrast.....	McMinn		
Crook, J. L., Jackson.....	Madison	Kittrell, S. S., Englewood.....	McMinn		
Crook, J. A., Jackson.....	Madison	Moore, W. S., Secy., Athens.....	McMinn		
Duckworth, W. C., Jackson.....	Madison	Nichols, Jno. O., Etowah.....	McMinn		
Drake, C. C., Jackson.....	Madison	Nankivell, Jas. R., Pres., Athens.....	McMinn		
Dancy, A. B., Jackson.....	Madison	Proudford, Jas. L., Athens.....	McMinn		
Gresham, J. W., Jackson.....	Madison	Staunton, G. W., Athens.....	McMinn		
Greer, R. L., Norwood.....	Madison	Shipley, Gus, Athens.....	McMinn		
Hawkins, Herman, Secy., Jackson.....	Madison	Taylor, Henry F. Calhoun.....	McMinn		
Hopper, J. D., Pres., Jackson.....	Madison	Vinsant, Chas. C., Etowah.....	McMinn		
Hamilton, F. B., Jackson.....	Madison	Bell, W. T., Selmer.....	McNairy		
Henderson, S. A., Jackson.....	Madison	Boatman, J. A., Bethel Springs, R. R.			
Herron, J. T., Jackson.....	Madison	No. 1.....	McNairy		
Jones, Jas. T., Jackson.....	Madison	Dodds, B. C., Secy., Gravelhill.....	McNairy		
Jones, H. L., Jackson.....	Madison	Hodges, W. H., Finger.....	McNairy		
Lusk, P. B., Jackson.....	Madison	King, J. M., Ramer.....	McNairy		
Lockman, W. L., Medon.....	Madison	Key, M. C., Ramer.....	McNairy		
McCoy, Ambrose, Jackson.....	Madison	Smith, J. L., Selmer.....	McNairy		
O'Connor, F. J., Jackson.....	Madison	Smith, J. R., Selmer.....	McNairy		
Raines, Jas. T., Malesus.....	Madison	Sanders, E. G., Stantonville.....	McNairy		
Raines, Jessie, Malesus.....	Madison	Sanders, H. C., Pres., Selmer, R. R. No 1.....	McNairy		
Rochelle, W. F., Jackson.....	Madison	Wallace, W. W., Selmer.....	McNairy		
Snythe, Kelly, Spring Creek.....	Madison	Brook, R. A., Pres., Sweetwater.....	Monroe		
Troutt, J. M., Jackson.....	Madison	Bagwell, B. W., Madisonville.....	Monroe		
Webb, L. L., Carroll.....	Madison	Davis, J. E., Secy., Sweetwater.....	Monroe		
Williamson, Leon, Jackson.....	Madison	Hardin, J. H., Sweetwater.....	Monroe		
Baxter, R. G., Carey Springs.....	Marshall	McClain, W. A., Sweetwater.....	Monroe		
Crunk, J. C., Luna.....	Marshall	McCullum, J. A., Tariffville.....	Monroe		
Dryden, D. M., Petersburg.....	Marshall	Penland, S. N., Madisonville.....	Monroe		
Gault, F. H., Cornersville.....	Marshall	Roberts, T. M., Sweetwater.....	Monroe		
Jones, Alf, Cornersville.....	Marshall	Shearer, H. C., Madisonville.....	Monroe		
Hardison, C. C., Lewisburg.....	Marshall	Acece, F. M., Dover, Tenn.....			
Hardison, J. A., Pres., Lewisburg.....	Marshall	Brandau, Jno. W., Clarksville.....	Montgomery		
Hardison, S. T., Lewisburg.....	Marshall	Ezell, J. J., Clarksville.....	Montgomery		
Logan, T. R., Lewisburg.....	Marshall	Ferguson, R. T., R. F. D. 4, Clarksville.....	Montgomery		
Moffitt, S. A., Mooresville.....	Marshall	Hughes, M. L., Clarksville.....	Montgomery		
Ransom, W. C., Farmington.....	Marshall	Hunt, I. E., New Providence.....	Montgomery		
Reed, T. E., Secy., Lewisburg.....	Marshall	Macon, R. B., Clarksville.....	Montgomery		
Vaden, W. E., Rich Creek.....	Marshall	Marable, T. H., Clarksville.....	Montgomery		
White, Buford, Lewisburg.....	Marshall	Morrison, J. C., Clarksville.....	Montgomery		
White, Garreth, Chapel Hill.....	Marshall	McFall, R. J., Cumberland City.....	Montgomery		
womack, C. W., Lewisburg.....	Marshall	Neblett, L. L., Stayton.....	Montgomery		
Anderson, H. O., Williamsport.....	Maury	Neblett, S. E., Southside.....	Montgomery		
Bundrant, W. C., St. Joseph.....	Maury	Nesbitt, H. A., Cunningham.....	Montgomery		
Beasley, M. A., Hampshire.....	Maury	Runyon, R. J., Pres., Clarksville.....	Montgomery		
Biddle, P. D., Columbia.....	Maury	Slayden, J. D., Clarksville.....	Montgomery		
Church, R. M., Williamsport.....	Maury	Vaughan, G. E., Clarksville.....	Montgomery		
Collins, E. E., Columbia.....	Maury	Webb, L. E., St. Bethlehem.....	Montgomery		
Cook, M. M., Secy., Santa Fe.....	Maury	Webb, Roy, Secy., St. Bethlehem.....	Montgomery		
Edwards, J. A., Columbia.....	Maury	Bird, A., Wartburg.....	Morgan		
Faucett, Dr. Paul H., Columbia.....	Maury	Jones, S. H., Secy., Sunbright.....	Morgan		
Hardin, Jas. O., (Vet.) Spring Hill.....	Maury	Todd, G. R., Wartburg.....	Morgan		
Hardison, T. J., Carters Creek.....	Maury	Wiltsie, A. S., Pres., Lansing.....	Morgan		
Harrison, W. B., (Vet.), Columbia.....	Maury	Blanton, M. A., Union City.....	Obion		
Haywood, J. L., Carters Creek.....	Maury	Butler, H. T., Union City.....	Obion		
Horsley, A. S., Columbia.....	Maury	Capps, J. M., Kenton.....	Obion		
Jones, Jas. H., Columbia.....	Maury	Carlton, J. D., Union City.....	Obion		
Kittrell, W. H., Mt. Pleasant.....	Maury	Chandler, S. B., Minnick.....	Obion		
Perry, R. S., Columbia.....	Maury	Cunningham, J. P., Elbridge.....	Obion		
Pillow, Robert, Columbia.....	Maury	Darnall, J. F., Pres., Obion.....	Obion		
Porter, O. J., Columbia.....	Maury	Glover, H., Troy.....	Obion		
Ragsdale, L. E., Williamsport.....	Maury	Havner, J. B., Troy.....	Obion		
Thomas, H. E., Pres., Columbia.....	Maury	Howard, J. A., McConnell.....	Obion		
Timmons, E. A., Columbia.....	Maury	Jernigan, V. J., Obion.....	Obion		
Webb, W. R., Hampshire.....	Maury	Maddox, D. C., Terrell.....	Obion		
Wilkes, J. H., (Vet.), Columbia.....	Maury	Marshall, T. E., Union City.....	Obion		

Name	Address	County	Name	Address	County
Matlock, P. N., Mason Hall.....	Obion	House, Thos. B., Springfield.....	Robertson		
Paschal, J. B., Fulton, Ky.	Obion	Jones, Guy R., Orlinda.....	Robertson		
Pearce, D. M., Union City.....	Obion	Johnson, Turner L., Greenbrier.....	Robertson		
Prather, D. J., Secy., Union City.....	Obion	Mathews, Richard L., Springfield.....	Robertson		
Prather, P. W., Woodlawn Mills.....	Obion	Moore, Jerome, E., (Honorary), Spring-			
Roberts, W. F., Troy	Obion	field	Robertson		
Roper, J. F., Union City	Obion	Porter, William W., Springfield.....	Robertson		
Sharp, J. B., Obion	Obion	Reeves, Jno. H., Springfield, R. R. No. 1, Robertson			
Watson, F. W., Union City	Obion	Ramer, D. W., Springfield, R. R. No. 3.....	Robertson		
Wells, J. J., Glass	Obion	Royster, William, Cedar Hill, R. R.			
White, E. H., Rives	Obion	No. 5.....	Robertson		
Wright, J. L., Elbridge	Obion	Sory, Bailey B., Cedar Hill.....	Robertson		
Bertram, J. F., Manson	Obion	Sory, Leander F., Adams.....	Robertson		
Breeding, W. M., Livingston.....	Overton	Scott, Miles, Pres., Springfield, R. R.			
Capps, M. B., Livingston	Overton	No. 9.....	Robertson		
Landsen, J. B., Livingston.....	Overton	Woodruff, Jas. B., Springfield, R. R.			
McDonald, J. T., Monroe	Overton	No. 8.....	Robertson		
Qualls, A. B., Secy., Livingston.....	Overton	Walton, L. B., (Honorary), White			
Reed, W. A., Livingston.....	Overton	House, R. R. No. 1.....	Robertson		
Smith, J. E., Pres., Hilham.....	Overton	Woodard, F. M., Springfield.....	Robertson		
Wells, M. H., Hilham.....	Overton	Winters, W. W., Greenbrier.....	Robertson		
Akin, Elias Marion, Copperhill.....	Polk	Bilbro, W. C., Murfreesboro.....	Rutherford		
Barnes, James Jackson, Copperhill.....	Polk	Crosthwait, Geo. W., Florence.....	Rutherford		
Copeland, W. J., Fetzerton.....	Polk	Duggan, S. S., Eagleville.....	Rutherford		
Geisler, Francis Oto, Secy., Isabella.....	Polk	Engles, W. J., Smyrna.....	Rutherford		
Gilliam, William Young, Copperhill.....	Polk	Huff, D. C., Christiana.....	Rutherford		
Ilyder, Robert Lee, Isabella.....	Polk	Jones, Enoch H., Murfreesboro.....	Rutherford		
Kinsey, Fred M., Ducktown.....	Polk	Kelton, J. C., Lascassas.....	Rutherford		
Kinsey, Lucius E., Ducktown.....	Polk	Murfree, Jas. B., Murfreesboro.....	Rutherford		
Lewis, Albert W., Pres., Copperhill.....	Polk	Murfree, M. B., Murfreesboro.....	Rutherford		
Adams, J. O., Pres., Monterey.....	Putnam	Overall, Jas. C., Lascassas.....	Rutherford		
Curtis, H. C., Algood.....	Putnam	Pitts, Rufus, Murfreesboro.....	Rutherford		
Denton, Samuel, Buffalo Valley.....	Putnam	Rucker, Jas. J., Murfreesboro.....	Rutherford		
Dyer, Lex, Secy., Cookeville.....	Putnam	Yoree, Wm. E., Readyville.....	Rutherford		
Ensor, L. D. J., Cookeville.....	Putnam	Boyatt, F. M., Oneida.....	Scott		
Farmer, W. S., Cookeville.....	Putnam	Foster, J. I., Huntsville.....	Scott		
Howard, W. A., Algood.....	Putnam	Phillips, T. L., Pres., Newland.....	Scott		
Moore, J. T., Algood.....	Putnam	McGill, T. M., Norma.....	Scott		
Storris, J. R., Cookeville.....	Putnam	Shields, J. A. P., Secy., Norma.....	Scott		
Trapp, J. S., Sparta.....	Putnam	Thompson, M. E., Luxton.....	Scott		
White, W. A., Wilder.....	Putnam	Ayers, J. C., 2158 Union Ave., Memphis....	Shelby		
Chadwick, P. C., Rhea Springs.....	Rhea	Andrews, J. L., Rogers Bldg., Memphis....	Shelby		
Clack, J. M., Spring City.....	Rhea	Anderson, P. H., Tenn. Trust Bldg.,			
Donaldson, Sam, Dayton.....	Rhea	Memphis	Shelby		
Gillespie, J. R., Dayton.....	Rhea	Anderson, W. S., Memphis Trust Bldg.,			
Gross, A. W., Dayton.....	Rhea	Memphis	Shelby		
Hammock, J. W., Graysville.....	Rhea	Branch, B. L., Collierville.....	Shelby		
Lovell, A. I., Graysville.....	Rhea	Blackburn, E. C., Randolph Bldg.,			
McDonald, W. P., Spring City.....	Rhea	Memphis	Shelby		
McKenzie, Jas. L., Pres., Graysville.....	Rhea	Berry, H. L., Randolph Bldg., Memphis....	Shelby		
Miller, R. C., Secy., Evensville.....	Rhea	Beaty, H. W., Station C., Memphis.....	Shelby		
Thomison, J. G., Dayton.....	Rhea	Bridger, Jas. D., Memphis Trust Bldg.,			
Thomison, W. F., Dayton.....	Rhea	Memphis	Shelby		
Watkins, R. K., Spring City.....	Rhea	Beauchamp, Jesse L., 614 N. 7th St.,			
Yancey, Sam M., Dayton, R. F. D. No. 4....	Rhea	Memphis	Shelby		
Clack, J. M., Rockwood.....	Roane	Barton, Jas. L., 78 S. Main St., Memphis....	Shelby		
Clack, W. S., Rockwood.....	Roane	Biggs, J. M., Memphis Trust Bldg., Memphis, Shelby			
Givan, G. C. G., Secy., Harriman.....	Roane	Brinson, S. N., 201 Cooper Ave., Memphis....	Shelby		
Goodwyn, J. B., Harriman.....	Roane	Burns, W. B., Porter Bldg., Memphis....	Shelby		
Hill, W. W., Harriman.....	Roane	Black, W. T., Randolph Bldg., Memphis....	Shelby		
Nelson, J. E., Rockwood.....	Roane	Braun, Wm. T., 814 Exchange Bldg., Mem-			
Philips, E. S., Rockwood.....	Roane	phis	Shelby		
Roberts, John, Kingston.....	Roane	Bearden, M. L., 1091 Greenwood, Memphis....	Shelby		
Sewell, J. A., Rockwood.....	Roane	Baldwin, W. H., Station G, Memphis.....	Shelby		
Waller, J. J., Oliver Springs.....	Roane	Bell, Jno. C., 534 N. 2nd., Memphis.....	Shelby		
Wilson, J. C., Rockwood.....	Roane	Burford, G. C., Randolph Bldg., Memphis....	Shelby		
Williams, W. B., Harriman.....	Roane	Bell, C. A., Lee Bldg., Memphis.....	Shelby		
Zirkle, G. P., Kingston.....	Roane	Beck, C. M., 293 S. 3rd St., Memphis.....	Shelby		
Brown, T. L. B., White House, R. R. No.		Collier, Casa, Tenn. Trust Bldg., Memphis....	Shelby		
1	Robertson	Chaffee, F. R., Lucy	Shelby		
Covington, Jas. J., Cross Plains.....	Robertson	Crisler, J. A., Peabody Hotel, Memphis....	Shelby		
Connell, Jas. R., Adams.....	Robertson	Carter, J. Hugh, Tenn. Trust Bldg.,			
Fyke, Benjamin F., Secy., Springfield.....	Robertson	Memphis	Shelby		
Frey, J. J., Springfield, R. R. No. 6....	Robertson	Cullings, Jesse J., 83 W. Jackson Bldg.,			
Green, Jno, R., Springfield.....	Robertson	Memphis	Shelby		

Name	Address	County	Name	Address	County
Crutcher, J. R., Tenn. Trust Bldg., Memphis		Shelby	Leake, E. K., Collierville.....		Shelby
Crofford, T. J., 211 N. 3rd St., Memphis...		Shelby	Livermore, Geo. R., Tenn. Trust Bldg., Memphis		Shelby
Campbell, W. C., Randolph Bldg., Memphis...		Shelby	Lipscomb, J. A., 63 N. Main St., Memphis...		Shelby
Clary, W. F., Memphis Trust Bldg., Memphis		Shelby	Leroy, Louis, Tenn. Trust Bldg., Memphis...		Shelby
Castles, W. A. S., 63 1-2 N. Main St., Memphis		Shelby	Lawrence, W. S., Memphis Trust Bldg., Memphis		Shelby
Campbell, S. S., 729 Monroe St., Memphis...		Shelby	Lanhorn, C. C., 700 N. Main St., Memphis...		Shelby
Clark, J. C., Goodwyn Inst., Memphis....		Shelby	Meyer, L. L., Memphis Trust Bldg., Memphis		Shelby
Cochran, J. F., 579 5th St., Memphis....		Shelby	Moore, Alfred, Randolph Bldg., Memphis...		Shelby
Cunningham, J. W., Randolph Bldg., Memphis		Shelby	McGhee, J. L., Memphis		Shelby
Currie, J. A., Lee Bldg., Memphis.....		Shelby	McMahon, A. R., Goodwyn Inst., Memphis...		Shelby
Dickson, Harry, Memphis		Shelby	Mitchell, Robt. H., So. Ex. Bldg., Memphis...		Shelby
Dunavant, B. N., Secy., Exchange Bldg., Memphis		Shelby	Morrow, C. S., Rogers Bldg., Memphis....		Shelby
Duvall, C. E., 218 McLemore St., Memphis...		Shelby	Mitchell, E. D., Randolph Bldg., Memphis...		Shelby
Duncan, I. G., 422 N. Waldran, Memphis...		Shelby	Malone, F. M., Capleville.....		Shelby
DeLoach, A. B., Scimitar Bldg., Memphis...		Shelby	Minor, Jas. L., Randolph Bldg., Memphis...		Shelby
Ellett, C. E., Randolph Bldg., Memphis....		Shelby	Maury, Jno. M., Memphis Trust Bldg., Memphis		Shelby
Everett, H. B., Station C., Memphis.....		Shelby	Moore, Moore, Memphis Trust Bldg., Memphis		Shelby
Edwards, C. W., 488 Laclède Ave., Memphis		Shelby	McCown, O. S., Memphis Trust Bldg., Memphis		Shelby
Erskine, Alexander (Vet.), Randolph Bldg., Memphis		Shelby	Mann, Robt., Goodwyn Inst., Memphis....		Shelby
Fontaine, Bryce W., Byrd Bldg., Memphis...		Shelby	Mason, R. F., Randolph Bldg., Memphis...		Shelby
Francis, E. E., 115 N. Main, Memphis.....		Shelby	Malone, Battle, Pres., Rodgers Bldg., Memphis		Shelby
Farris, H. L., Frisco Hosp., St. Louis, Mo.		Shelby	Meeker, Sidney, 1609 Lamar, Memphis....		Shelby
French, J. E., Silver City, Miss.....		Shelby	Michie, W. T., Scimitar Bldg., Memphis...		Shelby
Flippin, S. J., Brunswick.....		Shelby	Maury, R. B., Memphis Trust Bldg., Memphis		Shelby
Flaniken, R. B., Rogers Bldg., Memphis ..		Shelby	Malone, G. B., Memphis Trust Bldg., Memphis		Shelby
Fagin, Robt., Tenn. Trust Bldg., Memphis...		Shelby	McElroy, J. B., Porter Bldg., Memphis....		Shelby
Fleumer, O. C., Goodbar Bldg., Memphis...		Shelby	McKinney, Richmond, Memphis Trust Bldg., Memphis		Shelby
Farrington, S. M., Memphis Trust Bldg., Memphis		Shelby	Mitchell, E. C., Goodwyn Inst., Memphis...		Shelby
Frost, I. N., Station C., Memphis.....		Shelby	Mitchell, W. W., Memphis.....		Shelby
Graham, Frank, Memphis Trust Bldg., Memphis		Shelby	Oliver, A. B., Tenn. Trust Bldg., Memphis...		Shelby
Gray, Jas. N., Arlington.....		Shelby	Owens, Jas. P., 218 McLemore St., Memphis		Shelby
Goltman, M., Memphis Trust Bldg., Memphis		Shelby	Porter, A. R., Randolph Bldg., Memphis...		Shelby
Hudson, A. G., Raines.....		Shelby	Petty, G. E., 958 S. 4th St., Memphis....		Shelby
Henning, B. G., Memphis Trust Bldg., Memphis		Shelby	Pendergrast, L. H., Memphis Trust Bldg., Memphis		Shelby
Ham, E. C., Randolph Bldg., Memphis...		Shelby	Price, J. W., Memphis Trust Bldg., Memphis		Shelby
Haskell, L. W., Memphis		Shelby	Perkins, P. A., Memphis Trust Bldg., Memphis		Shelby
Havell, W. T., Brunswick.....		Shelby	Pride, W. T., Memphis Trust Bldg., Memphis		Shelby
Haynes, E. E., Randolph Bldg., Memphis...		Shelby	Posert, Henry, So. Express Bldg., Memphis		Shelby
Hoover, F. B., Goodwyn Inst., Memphis...		Shelby	Pistole, W. H., Station G., Memphis.....		Shelby
Henning, Max, Memphis Trust Bldg., Memphis		Shelby	Ragsdale, W. E., 218 McLemore St., Memphis		Shelby
Haase, M., Memphis Trust Bldg., Memphis...		Shelby	Raines, N. F., Court House, Memphis.....		Shelby
Hall, D. M., Memphis Trust Bldg., Memphis...		Shelby	Rudisill, A. W., 1047 Patton, Memphis....		Shelby
Henderson, R. G., Randolph Bldg., Memphis...		Shelby	Rogers, W. B., Rogers Bldg., Memphis....		Shelby
Holder, E. M., Memphis Trust Bldg., Memphis		Shelby	Rosamond, Eugene, Byrd Bldg., Memphis...		Shelby
Hill, J. F., Tenn. Trust Bldg., Memphis...		Shelby	Rucker, S. T., 935 Raleigh Memphis.....		Shelby
Holmes, J. B., 1686 Euclid Ave., Memphis...		Shelby	Sinclair, A. G., So. Express Bldg., Memphis		Shelby
Jacobs, A. G., Tenn. Trust Bldg., Memphis...		Shelby	Summers, C. K., Exchange Bldg., Memphis		Shelby
Jones, F. A., Tenn. Trust Bldg., Memphis...		Shelby	Sauls, D. K., 174 S. Main St., Memphis...		Shelby
Jones, Heber, Tenn. Trust Bldg., Memphis...		Shelby	Smythe, F. D., Porter Bldg., Memphis....		Shelby
Jelks, Jno. L., Tenn. Trust Bldg., Memphis...		Shelby	Stanley, J., Byrum, Randolph Bldg., Memphis		Shelby
Johnson, J. E., Memphis Trust Bldg., Memphis		Shelby	Stephenson, M. P., Memphis.....		Shelby
Jones, Kennedy, Tenn. Trust Bldg., Memphis		Shelby	Stewart, Walter, Memphis		Shelby
Jones, Geo. P., 218 McLemore St., Memphis...		Shelby	Schultz, M. A., 40 W. Iowa Ave., Memphis...		Shelby
Kane, Elizabeth C., Exchange Bldg., Memphis		Shelby	Sibley, S. J., 752 McLemore, Memphis....		Shelby
Krauss, Wm., Memphis Trust Bldg., Memphis		Shelby	Smith, W. H., 256 Randolph Bldg., Memphis...		Shelby
Kincaid, H. B., Memphis Trust Bldg., Memphis		Shelby	Somerville, W. G., Central Bank, Memphis...		Shelby
Lewis, A. C., Exchange Bldg., Memphis...		Shelby	Simpson, W. L., Randolph Bldg., Memphis...		Shelby
			Turner, B. F., Odd Fellows Bldg., Memphis...		Shelby

Name	Address	County
Thornton, G. B. (Vet.)	150 Court Ave., Memphis	Shelby
Thomas, J. P.	Tenn. Trust Bldg., Memphis	Shelby
Toombs, S. W.	Tenn. Trust Bldg., Memphis	Shelby
Thorn, S. W.	892 Louisiana Ave., Memphis	Shelby
Taylor, Neumon	964 New York Ave., Memphis	Shelby
Taylor, W. W.	Randolph Bldg., Memphis	Shelby
Terrell, S. D.	201 S. Cooper, Memphis	Shelby
Underwood, Robt. B.	325 Carroll St., Memphis	Shelby
Vaughan, J. A.	Goodwyn Inst., Memphis	Shelby
Van Horn, J. A.	78 N. Main St., Memphis	Shelby
Venn, J. H.	Scimitar Bldg., Memphis	Shelby
Williams, A. B.	Randolph Bldg., Memphis	Shelby
White, C. A.	Tenn. Trust Bldg., Memphis	Shelby
Watkins, E. D.	Memphis Trust Bldg., Memphis	Shelby
Watkins, H. C.	Lee Bldg., Memphis	Shelby
Wolff, H. S.	So. Express Bldg., Memphis	Shelby
Wadley, S. L.	Randolph Bldg., Memphis	Shelby
Wadlington, W. J.	Randolph Bldg., Memphis	Shelby
Webb, W. S.	521 S. Front St., Memphis	Shelby
Wallace, W. R.	958 So. 4th St., Memphis	Shelby
Williamson, W. L.	Goodwyn Inst., Memphis	Shelby
Walton, J. M.	901 N. 3rd St., Memphis	Shelby
West, H. A.	Memphis	Shelby
White, R. L.	2109 Harbert, Memphis	Shelby
Winston, A. L.	Alanogordo, N. M.	Shelby
Alexander, M. N.	Pleasant Shade	Smith
Beasley, J. J.	Pleasant Shade	Smith
Beasley, Isham	Dickson Springs	Smith
Bridges, J. G.	New Middleton	Smith
Campbell, J. S.	Gordonville	Smith
Chism, J. H.	Carthage	Smith
Donoho, C. H.	Difficult	Smith
High, B. J.	Secy., Elmwood	Smith
Hargis, F. C.	Chestnut Mound	Smith
Key, R. E.	Pres., Monoville	Smith
King, R. W.	Gordonsville	Smith
Robins, C. D.	Gordonsville	Smith
Swope, Frank	Carthage	Smith
Parker, R. T.	Dixon Springs	Smith
White, J. A.	Carthage	Smith
Allen, W. T.	Pres., Gallatin	Sumner
Dorris, W. B.	Gallatin	Sumner
Dotson, W. S.	Secy., Gallatin	Sumner
Dunklin, F. H.	Gallatin	Sumner
Gallbreath, B. S.	Hendersonville	Sumner
Lackey, W. N.	Gallatin	Sumner
Parker, Jno. R.	Gallatin	Sumner
Peeden, E. F.	Portland	Sumner
Reece, Homer	Gallatin	Sumner
Woodson, L. M.	Gallatin	Sumner
Wright, T. E.	Bethpage	Sumner
Bnrger, Thos. O.	Secy., McMinnville	Warren
Cantrell, Q. C.	Pres., McMinnville	Warren
Copenhaver, H. V.	Rock Island	Warren
Cummings, V. B.	(Vet.), Rowland	Warren
Farrar, H. C.	Hillsboro	Warren
Fisher, G. C.	Dibrell	Warren
Mooneyham, E. L.	Rock Island	Warren
Norheutt, E. E.	McMinnville	Warren
Ramsey, A. B.	McMinnville	Warren
Reynolds, Herman	Viola	Warren
Seitz, Albert	McMinnville	Warren
Trail, A. J.	McMinnville	Warren
Akers, R. M.	Laurel Bloomery	Washington
Arnold, J. F.	Limestone	Washington
Broyles, C. J.	Johnson City	Washington
Cox, J. W.	Secy., Johnson City	Washington
Carroll, C. T.	Johnson City	Washington
Dulaney, W. R.	Jonesboro	Washington
Jones, J. H.	Garbers	Washington

Name	Address	County
Kennedy, W. T.	Johnson City	Washington
Long, E. A.	Johnson City	Washington
Lewis, A. I.	Laurel Bloomery	Washington
Matthews, W. J.	Johnson City	Washington
Miller, H. D.	Johnson City	Washington
Panhorst, M. H.	Jonesboro	Washington
Randall, J. P.	Johnson City	Washington
Sells, G. J.	Johnson City	Washington
Smith, C. E.	Johnson City	Washington
Trigg, Daniel	Johnson City	Washington
West, E. T.	Johnson City	Washington
Wallace, J. W.	Watauga	Washington
Baker, R. F.	Sparta	White
Breeding, W. J.	Ravenscroft	White
Bradley, A. A.	Eastland	White
Brock, W. L.	Sparta	White
Cantrell, W. B.	Pres., Cassville	White
Cotton, L. D.	Sparta	White
Earles, P. H.	Sparta	White
Gaines, S. E.	Sparta	White
Gott, J. R.	Clifty	White
Gist, D. R.	Sparta	White
Johnson, W. M.	Bon Air	White
Lewis, P. K.	Doyle	White
Lewis, V. L.	Crossville	White
Mason, E. C.	Ravenscroft	White
Richards, A. F.	Secy., Sparta	White
Smith, R. E. L.	Doyle	White
Young, W. B.	Clifty	White
Cochran, H. P.	Franklin	Williamson
German, Dan, Jr.	Franklin	Williamson
Graham, W. W.	Arno	Williamson
Greer, J. W.	Thompson Station	Williamson
Howlett, K. S.	Secy., Franklin	Williamson
Nolen, B. F.	Franklin	Williamson
Oden, S. F.	Brentwood	Williamson
Paschal, G. C.	Arrington	Williamson
Shannon, J. O.	Pres., Franklin	Williamson
White, S. W.	Franklin	Williamson
Bratton, Thos. O.	Pres., Lebanon	Wilson
Bone, James R.	Secy., Lebanon	Wilson
Davis, J. L.	Watertown	Wilson
Eskew, A. O.	Lebanon	Wilson
Edgerton, H. K.	Lebanon	Wilson
Landis, P. K.	Laguardo	Wilson
Lillard, R. Q.	Lebanon	Wilson
McFarland, J. J.	Lebanon	Wilson
Oldham, D. P.	Mt. Juliet	Wilson
Rhea, B. S.	Lebanon	Wilson
Tilley, L. L.	Lebanon	Wilson
Weaver, J. M.	Mt. Juliet	Wilson
Young, C. V.	Lebanon	Wilson

HAMILTON COUNTY.

Weekly meeting of the Chattanooga Academy of Medicine and Hamilton County Medical Society held May 26, 1911 at 8 P.M.

President Jas. H. Atlee presided. Roll of members called, thirty-nine being present. Eight visiting physicians were present. Minutes of the last regular meeting were read and approved. Applications for membership were read from Drs. C. R. Martin and Jos. A. Richmond and referred to the Board of Censors. The rules were suspended and the Board of Censors immediately reported favorably upon the application of Dr. Martin, and he was elected to

membership in the Society. On motion, the President was instructed to name a committee of three to revise the fee bill as regards fees to be charged for administering salvarsan. This committee consists of Drs. E. T. Newell, Jno. B. Steele, and the Secretary. Dr. E. M. Sanders, of Nashville, read a most interesting and instructive paper entitled, "Drainage of the Peritoneal Cavity." Discussion opened by Dr. E. E. Reisman. Discussion continued by Drs. Geo. R. West, E. T. Newell, E. B. Anderson, E. D. Newell, and H. L. Fancher. Discussion closed by Dr. Sanders.

The Society adjourned.

H. P. LARIMORE, *Secretary*.

Weekly meeting of the Chattanooga Academy of Medicine and Hamilton County Medical Society held June 2, 1911, at 8 P.M.

President Jas. H. Atlee presided. Roll of members called, forty being present. One visiting physician present. Minutes of the last regular meeting were read and approved. The Board of Censors reported favorably upon the applications for membership from Dr. Jos. A. Richmond, Harrison (Hamilton Co.), and Dr. George F. Ryan, 726 Market St., City, and they were elected to membership in the Society. Motion prevailed that the Secretary convey to Dr. N. C. Steele the sympathy of the Society in the death of his wife. Cases were reported and discussed by Drs. H. L. Fancher, B. S. Wert, E. B. Anderson, J. E. Green, E. T. Newell and others. Dr. W. G. Bogart, city, read an interesting and original essay entitled "The Toxemias of Pregnancy." Discussion opened by Dr. J. C. Brooks; further discussion by Drs. E. B. Anderson, Raymond Wallace, G. V. Williams, E. B. Wise, W. M. Bogart, Y. L. Abernathy, B. G. Allen, J. J. Gee, H. L. Fancher, B. S. Wert, and W. H. Cheney. Discussion closed by the essayist.

The Society adjourned.

H. P. LARIMORE, *Secretary*.

M'INN COUNTY.

A number of physicians of East Tennessee met in Athens June 5-6, and organized a society to be known as Lower East Tennessee Medical Society. As temporary officers, Dr. Chambers Deadrick, of Knoxville, President; Dr. J. E. Davis, of Sweetwater, Secretary. A number of very interesting papers were read and discussed and the following permanent officers were elected for the year: Dr. Gus Shipley, of Athens, President; Dr. J. E. Davis, Sweetwater, First Vice-President; Dr. T. E. Speck, of Cleve-

land, Second Vice-President; Dr. W. S. Moore, of Athens, Secretary-Treasurer.

Forty-seven members were enrolled. Adjourned to meet in Cleveland the second Thursday and Friday of May, 1912.

W. S. MOORE, *Secretary*.

HENDERSON COUNTY.

We wish to report that the physicians of Henderson County have reorganized the Henderson County Medical Society, the following officers being elected: President, Dr. W. B. Keaton, of Scott's Hill; First Vice-President, Dr. S. T. Parker, of Lexington; Second Vice-President, Dr. E. E. Waller, of Juno; Secretary, Dr. W. F. Huntsman, of Lexington. Dr. J. C. Stinson was appointed to write an essay on "Illio-Colitis," and Dr. S. T. Parker on "Diagnosis and Treatment of Typhoid Fever," to be read and discussed at the next regular meeting.

WILSON COUNTY.

A well attended and interesting session of the Wilson County Medical Society was held June 10, at 10 o'clock, in the City Hall. A number of addresses were made by physicians on different subjects, among the most interesting of which was an excellent lecture given by Dr. W. A. Bryan, of Nashville.

WASHINGTON COUNTY.

The Johnson City and Washington County Medical Society meets the first Thursday in each month, in the evening. At the April meeting it was decided to hold a day session quarterly, for the convenience of the members living out of town, hoping thereby to induce a better attendance of our members and to develop a greater interest among the profession in the county and in the smaller counties nearby, where it has been impossible heretofore to maintain organization. The first day session was held in Johnson City Thursday, May 4, which was well attended by the members from the county and the profession of the adjoining counties was well represented.

The local members entertained at dinner at the Colonial Hotel. There were a number of good papers read, and the discussion was liberal and entertaining.

The papers and clinical reports were: Dr. Jno. F. Arnold, Limestone, "Management of Contagious Diseases." The discussion was opened by Dr. W. P. Matthews, of Johnson City. Dr. J. W. Cox, Johnson City, "Prevention of Typhoid Fever." This discussion was opened by Dr. J. P. Randall, of Johnson City. Dr. E. A. Long, Johnson City, reported a very interesting

case of ectopic pregnancy, and Dr. H. D. Miller a rare monster. Dr. C. J. Broyles, of Johnson City, had a paper, "When Not to Use Atropine."

The innovation was a success and will be repeated on the first Thursday in September.

It is the intention of this society to invite physicians from other counties to participate in the proceedings.

The adjacent counties of Carter, Unicoi, Sullivan, Johnson and Greene manifest interest in this movement. The society also has assurances of the interest of some of the medical men from some of the mountain counties in Virginia and North Carolina that have convenient railroad facilities.

J. W. COX, *Secretary*.

CORRESPONDENCE.

About thirty of the Chattanooga doctors are planning to attend the Lower East Tennessee Medical Society, eighteen of whom are to read papers. The meeting promises to be a scientific treat as well as a fine outing. It will serve to get the men in lower East Tennessee better acquainted, and the advance enthusiasm manifested portends a fine meeting and harmonious organization.

This Lower East Tennessee Medical Society, once organized, will attempt a merger with the East Tennessee Medical Society. This latter Society will hold its next meeting at Morristown in October, the Secretary being Dr. W. M. Copenhaver, of Bristol. The representatives from the Lower East Tennessee Medical Society will propose a merger of the two Societies, with the understanding that the East Tennessee Medical Society meet twice each year—one meeting in the upper portion and the other meeting in the lower portion—one to be held in the spring, the other in the fall. As the situation now is, the East Tennessee Medical Society is composed almost exclusively of upper East Tennessee doctors, and does not nearly fulfill its full duty or embrace its full territory.

Dr. L. L. Sheddan is the originator and prime mover for this organization of the Lower East Tennessee Medical Society, and no doubt will be its first President or Secretary, either position he might desire to have.

Yours cordially,

H. P. LARIMORE.

The programme follows:

C. B. Jones, of Knoxville. Subject: "The Tonsil." To open discussion, B. F. Travis, of Chattanooga.

Geo. R. West, of Chattanooga. Subject: "The Prostate." To open discussion, A. G. Kern, of Knoxville.

J. J. Waller, Oliver Springs. Subject: "Treatment of Fractures of Femur. To open discussion, J. P. Tillery, of Knoxville.

Oliver W. Hill, of Knoxville. Subject: "Diagnosis of Pneumonia in Infants." To open discussion, W. A. McClain, of Sweetwater.

Symposium of Tuberculosis. 1st. J. E. Davis, of Sweetwater. Subject: "Early Physical Signs in Pulmonary Tuberculosis." 2nd. H. Berlin, of Chattanooga. Subject: "Tuberculosis of the Kidney." 3rd. W. S. Ogle, of Knoxville. Subject: "Potts' Disease in Children." 4th. Jno. R. Parkinson, of Athens. Subject: "Mercury in Tuberculosis." To open discussion, C. P. McNabb, of Knoxville.

A. L. Rule, of Knoxville. Subject: "Puerperal Eclampsia." To open discussion, R. H. Brock, of Sweetwater.

Edwin B. Anderson, of Chattanooga. Subject: "Aneurysms." To open discussion, B. W. Bagwell, of Madisonville.

T. M. Roberts, of Sweetwater. Subject: "How to Succeed in the Practice of Medicine." To open discussion, J. P. Blankenship, of Maryville.

Leon L. Sheddan, of Knoxville. Subject: "Surgical Aspect of 'So-called' Indigestion."

Cooper Holtzelaw, of Chattanooga. Subject: "Ulcer of the Stomach." To open discussion, S. M. Penland, of Madisonville.

Edw. T. Newell, of Chattanooga. Subject: "Salvarsan."

W. H. L. White, of Knoxville. Subject: "Intravenous Administration of Salvarsan." To open discussion, T. C. Speck, of Cleveland.

J. B. Woolford, of Chattanooga. Subject: "Hemorrhoids." To open discussion, L. A. Copenhaver, of Englewood.

C. E. Ristine, of Knoxville. Subject: "Sterility." To open discussion, Chas. C. Vansant, of Etowah.

E. E. Reisman, of Chattanooga. Subject: "Inguinal Hernia; The Surgical Cure." To open discussion, Jno. O. Nichols, of Etowah.

B. B. Cates, of Knoxville. Subject: "Acidosis." To open discussion, J. C. Wilson, of Rockwood.

B. F. Travis, of Chattanooga. Subject: "Trachoma." To open discussion, J. H. Kincaid, of Knoxville.

W. S. Nash, of Knoxville. Subject: "The Heart; Its Position, Relation and Physiological Action." To open discussion, G. P. Zirkle, of Kingston.

W. G. Bogart, of Chattanooga. Subject: "Pelvic Disorders." To open discussion, Gus Shipley, of Athens.

B. D. Bosworth, of Knoxville. Subject: "Diphtheria." To open discussion, J. O. Foree, of Athens.

C. B. Wylie, of Chattanooga. Subject: "Systematic Infections Through the Pharyngeal Lymphatic Ring, Calling for Surgical Intervention." To open discussion, W. W. Hill, of Harriman.

J. P. Tillery, of Knoxville. Subject: "Report of Cases."

R. M. McCown, of Knoxville. Subject: "Report of Cases." To open discussion, T. E. P. Chambers, of Cleveland.

J. W. Horton, of Chattanooga. Subject: "Infection and Immunity." To open discussion, R. O. Kibler, of Cleveland.

Eben Alexander, of Knoxville. Subject: "Diagnosis and Treatment of Ectopic Pregnancy." To open discussion, J. T. Leiper, of Lenoir City.

J. H. Atlee, of Chattanooga. Subject: "Typhoid Fever in Children." (To open discussion, L. L. Barnes, of Vonore.

E. R. Zemp, of Knoxville. Subject: "Nitrous Oxide Oxygen Anesthesia." To open discussion, J. L. Basinger, of Riceville.

Raymond Wallace, of Chattanooga. Subject: "Myofibromata Uteri, with Report of Cases." To open discussion, A. B. McTeer, of Maryville.

Wm. Bowen, of Knoxville. Subject: "A Therapeutic Jumble." To open discussion, J. L. Proudfoot, of Athens.

R. M. Colmore, of Chattanooga. Subject: "Treatment of Urethral Strictures." To open discussion, Fred M. Kinsey, of Ducktown.

H. H. McCampbell, of Knoxville. Subject: "The X-Ray as a Diagnostic Aid." To open discussion, Cooper Holtzclaw, of Chattanooga.

W. H. Cheney, of Chattanooga. Subject: "Puerperal Infection." To open discussion, W. D. Padgett, of Lenoir City.

W. R. Cochrane, of Knoxville. Subject: "Diagnostic Methods of Today." To open discussion, J. J. Waller, of Oliver Springs.

G. Manning Ellis, of Chattanooga. Subject: "Intestinal Fistulae." To open discussion J. E. Davis, of Sweetwater.

H. E. Goetz, of Knoxville. Subject: "Light." To open discussion, Frank Trester Smith, of Chattanooga.

Y. L. Abernathy, of Hill City. Subject: "The Patent Medicine Question." To open discussion, W. S. Moore, of Athens.

A. G. Kern, of Knoxville. Subject: "Diagnosis of Gastric Ulcer." To open discussion, H. Berlin, of Chattanooga.

Frank Trester Smith, of Chattanooga. Subject: "Local Anesthetics." To open discussion, Chas. Huff Davis, of Knoxville.

Chas. Huff Davis, of Knoxville. Subject: "Adenoids." To open discussion, B. F. Travis, of Chattanooga.

COLORADO SPRINGS, COLO., May 10, 1911.

The El Paso County Medical Society joins with the Colorado Springs Chamber of Commerce in inviting the members of your State Medical Society to visit the Pike's Peak region en route to or from the Los Angeles convention of the American Medical Association.

There is more to see in the Pike's Peak region than in any similar area on the American continent. You can ascend to the summit of Pike's Peak, 14,109 feet above sea level, inspect the world's greatest gold mining camp—Cripple Creek—by the "one day trip that bankrupts the English language," see the Garden of the Gods, the most unique park owned by any American municipality, visit South Cheyenne Canon and the Seven Falls, make the trip through North Cheyenne Canon and over the High Drive, unrivalled in its splendid panorama of mountain and plain, drive through Williams Canon to that geological marvel, the Cave of the Winds, make the trip up the Mount Manitou Scenic Incline, and travel by automobile in absolute safety over a remarkable mountain boulevard to Crystal Park, 3,000 feet above Manitou.

Picturesque Manitou, with its famous mineral springs, invites you to partake of its hospitality.

In this land of sunshine and cool summers with invigorating days and refreshing nights, the climate calls irresistably to the

out-of-door life. Turf golf links commanding a magnificent view of the entire mountain range, hard natural automobile roads, picnic grounds, canons, parks, drives and trails provide each their full quota of recreation.

Ample hotel accommodations in Colorado Springs, Colorado City and Manitou range from the finest in the land to the simplest.

Break your journey at Colorado Springs. All railroads provide a liberal stopover or sidetrip arrangement. Plan your itinerary to include a day's rest and recreation in America's playground.

Very truly yours,

DR. J. A. PATTERSON,

DR. O. R. GILLET,

DR. D. J. SCULLY,

Committee.

BOOKS RECEIVED.

1,000 SURGICAL SUGGESTIONS. Practical Brevities in Diagnosis and Treatment. By Walter M. Brickner, B. S., M. D., Adjunct Surgeon, Mount Sinai Hospital. With the collaboration of Eli Moschowitz, M. D., James P. Wartasse, M. D., Harold Neuhoff, M. D., New York. Fourth American edition. Surgery Publishing Company, New York.

THE PRACTICAL MEDICINE SERIES. Vol. III...The Eye, Ear, Nose and Throat. Edited by Casey A. Wood, C. M., M. D., D. L.L., Albert H. Andrews, M. D., Gustavus P. Head, M. D. Series 1911. Published by The Year Book Publishers, Chicago.

PROGRESSIVE MEDICINE. A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College, Philadelphia, assisted by Leighton F. Appleman, M.D., Instructor in Therapeutics, Jefferson Medical College, Philadelphia. Volume II, June, 1911. Published by Lea and Febiger, Philadelphia.

BOOKS REVIEWED.

GONORRHEA IN THE MALE. By Abr. L. Wolbarst, M.D., Consulting Genitourinary Surgeon, Central Islip State Hospital; Visiting Genitourinary Surgeon People's Hospital, etc. Published by The International Journal of Surgery Co., New York.

This little volume is written specially for the general practitioner, and is not intended for the specialist. It contains many valuable suggestions which are original and are not the rehash of other text-books. He believes that considerable damage is being done by the prevalent method of treating this disease, and offers this little work as a plea for greater gentleness and conservatism.

PLASTER OF PARIS AND HOW TO USE IT. By Martin W. Ware, M. D., New York, Adjunct Attending Surgeon, Mount Sinai Hospital; Surgeon to the Good Samaritan Dispensary; Instructor of Surgery in the New York Post Graduate School. Second edition revised and enlarged. Price, cloth,

square form, \$1.25. De Luxe leather, \$2.50. Surgery Publishing Co., New York.

The author gives in detail many practical points in the selection of materials, preparation and care of plaster of Paris bandages and their application in various surgical conditions demanding their use. Plaster dressings of individual fractures are given in detail. Precautions in the application and removal of plaster dressings are well expressed. The book covers the field intended, and will be of use to those interested in the application of plaster dressings.

A BILL TO ESTABLISH A DEPARTMENT OF HEALTH, AND FOR OTHER PURPOSES.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That there be at the seat of government an executive department known as the Department of Health, and a Director of Health, who shall be the head thereof; and the provisions to title four of the Revised Statutes, including all amendments thereto, are hereby made applicable to said department. The Director of Health shall be appointed by the President, by and with the advice and consent of the Senate, at a salary of ——— dollars per annum and with tenure of office like that of the heads of the other executive departments. And said director shall cause a seal to be made for the Department of Health, of such device as the President approves, and judicial notice shall be taken of said seal.

SEC. 2. That there be in the Department of Health an assistant to the Director of Health, designated and known as the Commissioner of Health, who shall be a skilled sanitarian, appointed by the President, by and with the advice and consent of the Senate, who shall serve at the pleasure of the President, and who shall receive a salary of ——— dollars per annum. The Commissioner of Health shall perform such duties as are required by law and such as are prescribed by the Director of Health. There shall be also a chief clerk, a disbursing clerk, and such other employees as Congress may from time to time authorize. The Auditor for the State and other Departments shall receive and examine all accounts of moneys paid in and of moneys expended on account of the Department of Health, and shall certify the balance arising thereon to the Division of Bookkeeping and Warrants of the Treasury Department, and forthwith send a copy of each such certificate to the Director of Health.

SEC. 3. That it be the province and duty of the Department of Health to foster and promote all matters pertaining to the conservation and improvement of the public health and to collect and disseminate information relating thereto: *Provided*, That this Act shall not be construed as attempting to authorize the Department of Health to exercise or attempt to exercise, without express invitation from the chief executive or other proper authority of the State, any function belonging exclusively to such State, or to enter any premises in any State without the consent of the owner or occupant thereof; but the Director of Health, upon request of the chief executive or other proper authority of any State, Territory, the District of Columbia, or any insular possession, may detail for limited periods an officer or officers, employee or employees, from the Department of Health to assist the health authorities of such State, Territory, District, or insular possession in protecting and promoting the health of the people of such jurisdiction: *And provided further*, That the Department of Health shall recognize no so-called school or system of medicine.

SEC. 4. That to the Department of Health are

hereby transferred the following bureaus, divisions, and other branches of the Government, and all that pertains to them, and they and each of them shall remain under the supervision and direction of the Director of Health until otherwise directed by law, namely:

(a) From the Department of the Treasury is transferred the Public Health and Marine-Hospital Service.

(b) From the Department of Agriculture is transferred that part of the Bureau of Chemistry charged with the investigation of the adulteration of foods, drugs, and liquors, and with the execution and enforcement of the Act of Congress entitled "An Act for preventing the manufacture, sale, or transportation of adulterated or misbranded or poisonous or deleterious foods, drugs, medicines, and liquors, and for regulating traffic therein, and for other purposes," approved June thirtieth, nineteen hundred and six.

(c) From the Department of Commerce and Labor is transferred the Division of Vital Statistics, Bureau of the Census.

And the President is hereby authorized to transfer to the Department of Health at any time either the whole or any part, as to him may seem best, of any bureau, division, or other branch of the Government engaged in work pertaining to the public health, except the Medical Department of the Army and the Bureau of Medicine and Surgery of the Navy.

And each and every function, authority, power, duty and jurisdiction, of whatsoever character it may be, vested at the time of any transfer aforesaid in the head of the executive department from which such bureau, division, or other branch of the Government is transferred, shall, to the extent to which such function, authority, power, duty, or jurisdiction pertains to such bureau, division, or other branch of the Government, immediately upon such transfer become vested and thereafter remain vested in the Director of Health.

All land, buildings, furniture, apparatus, equipment, and property of whatsoever description, and all official records and papers in the custody of any executive department from which any bureau, division, or other branch of the Government is transferred as aforesaid and pertaining to the business of such transferred bureau, division, or other branch of the Government, shall at the time of such transfer, or as soon thereafter as practicable, and in so far as such action can be taken without hindering the work of the executive department from which such transfer is made, be given over into the custody of the Department of Health. And all unexpended balances of appropriations available at the time of such transfer for the use of any such transferred bureau, division, or other branch of the Government, or which may become available thereafter, shall be and remain available, in similar manner and to the same extent as if no transfer had been made.

SEC. 5. That within the Department of Health there shall be the following bureaus:

(a) Bureau of Sanitary Research; (b) Bureau of Child Hygiene; (c) Bureau of Vital Statistics and Publications; (d) Bureau of Foods and Drugs; (e) Bureau of Quarantine; (f) Bureau of Sanitary Engineering; (g) Bureau of Government Hospitals; (h) Bureau of Personnel and Accounts. And the Director of Health is hereby authorized to arrange and rearrange from time to time, with the approval of the President, the functions, duties, personnel, papers, records, and property, and the work, resources and equipment generally, coming into the jurisdiction and control of the Department of Health by the operation of this Act, so as most efficiently and economically to organize and maintain the several bureaus herein named and such divisions and

offices thereof as to said director seems proper; but in arranging and rearranging the personnel, the rank, pay, and allowances of the officers of the Public Health and Marine-Hospital Service commissioned at the time of the transfer of that service to the Department of Health shall not, by reason of anything in this Act contained, be dismissed. And the Director of Health may call upon the heads of other executive departments for information in their possession whenever such information is needed for the efficient and economical working of the Department of Health.

SEC. 6. That the President is hereby authorized to detail officers and employees from any of the several executive departments of the Government for duty under the Director of Health when so requested by said director, and to detail officers and employees in the service of the Department of Health to any of the other executive departments upon request of the head of such department, provided such detail can be made without prejudice to the public service, to carry into effect and purpose the intent of this Act; but officers and employees so detailed shall receive no additional compensation, but shall be paid such actual and necessary expenses as they incur in the discharge of their duties.

SEC. 7. That the Director of Health may, in his discretion and with the approval of the President, appoint an advisory board of not more than seven members, to confer with him upon his request, from time to time as he deems necessary, concerning the work of the Department of Health and the health of the people. The members of said board shall be selected because of their special knowledge of matters relating to the public health, and each shall hold office for a term of seven years or until his successor is appointed, except that the appointments first made, and appointments thereafter made to fill unexpired terms and terms of members who have held over beyond the periods of their original appointments, shall be made so that not more than one member shall retire during any one fiscal year. No member of any such advisory board shall receive any compensation for his services, but each shall be paid all actual expenses necessarily incurred in the discharge of his duties. And from and after the passage of this Act the Advisory board for the Hygienic Laboratory created by section five of an Act entitled "An Act to increase the efficiency and change the name of the United States Marine-Hospital Service," approved July first, nineteen hundred and two, be, and the same hereby is, abolished.

SEC. 8. That the Director of Health may, whenever in his judgment public interests would be promoted by so doing, invite the duly constituted health authorities of all or of any of the States, Territories, the District of Columbia, and insular possessions as to him may seem advisable, each to send one delegate to confer with him or his duly appointed representative or representatives and with each other, at such time and place as he may designate, concerning any particular matter or matters relating to the public health; and it shall be the duty of the Director of Health, upon the written application of the duly constituted health authorities of not less than five States, Territories, the District of Columbia, or insular possessions, stating the particular matter or matters which it is desired to consider, to appoint a time and place, and to call a conference of the health authorities of the States, Territories, the District of Columbia, and insular possessions that united in the request therefor, and personally or through his duly appointed representative or representatives to be present at such conference, but every State, Territory, the District of Columbia, and insular possession shall be notified of every conference, and if practicable be afforded an opportunity of being present and par-

ticipating in its proceedings. And from and after the passage of this Act annual and other conferences of State and Territorial boards of health, quarantine authorities, and State health officers, provided for by section seven of an Act entitled "An Act to increase the efficiency and change the name of the United States Marine-Hospital Service," approved July first, nineteen hundred and two, be, and the same are hereby, abolished.

SEC. 9. That, except as expressly provided in this Act, nothing herein contained shall be construed as limiting or abrogating any function, right, or duty imposed by law upon any existing bureau, division, or other branch of the Government; but such bureaus, divisions, and other branches of the Government as are by this Act or by authority thereof transferred to the Department of Health shall continue, under direction of the Director of Health, to have such functions, duties, and rights as they have at the time of such transfer; and in the case of such bureaus, divisions, and other agencies of the Government as are transferred in part only, the part not transferred shall continue to have and to exercise all such functions, duties, and rights, except such as specifically relate to the part transferred to the Department of Health, in the same manner and to the same extent as if no such transfer had been made.

SEC. 10. That the Director of Health shall annually submit to Congress a report in writing showing the operations of the Department of Health during the last preceding fiscal year, which report shall give an account of all moneys received and all moneys disbursed on account of such operations. He shall make such other reports from time to time as may be required by the President, or by either House of Congress, and such as are in his judgment necessary or expedient.

SEC. 11. That ——— dollars be, and the same are hereby, appropriated to carry into effect the provisions of this Act, out of any money in the Treasury not otherwise appropriated.

SEC. 12. That all Acts and parts of Acts contrary to the provisions of this Act or inconsistent therewith be, and the same are hereby, repealed.

SEC. 13. That this Act shall take effect on and after July first, nineteen hundred and twelve.

ORGANIZATION.

(Extract from a bulletin of the Chattanooga Society. A repetition here repeated —and even yet not understood by many.)

The present plan of medical organization aims for a local society in every county capable of sustaining an organization, formed of all the reputable physicians in the county; all the county societies united to form state societies and all the state societies united to form the American Medical Association. This plan is simple, yet adequate and capable of local variation, but still uniform. Consequent upon this plan the growth of medical societies during the past few years has been phenomenal, and the great increase in membership is due to the recognition and exaltation of the county society, it being the *unit*. Each state and territory has now a constituent association and many states have a local society in each county. In our own Tennessee, out of the ninety-six counties, sixty-one have county societies.

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"PELLAGRA."

BY DR. B. G. TUCKER.

Davidson County Health Officer.

Definition.—Pellagra, rough skin, sometimes called lombardy leprosy, is a specific insidious disease, characterized clinically by disturbances of motion, sensation, digestive disturbances, mental disturbances, leading to insanity, and to a peculiar erythema, especially on the exposed surfaces of the body and more especially on the dorsum of the hands and forearms.

The disease may be acute, sub-acute or chronic, usually the latter.

Attention may be called primarily to the fact that clinically the disease varies considerably, and that its etiology is still very incompletely understood. Hence it is really almost impossible to give a concise and satisfactory definition of the disease.

History.—Pellagra has been known in Spain since 1735, and was first described by G. Cásal, of Oviedo, who, observing the disease among the Asturian peasants and finding nothing on the subject in medical literature, called it mal de la rosa (from its characteristic erythema). He regarded it as a kind of leprosy. Later it was observed and described under a variety of names in Spanish literature.

It seems to have appeared in Italy about 1750, and was first described there in 1771, and Frapoli, of Milan, first applied the name of pellagra, Italian, pelle—skin, and agra, rough—to the disease. Here, as in Spain, the disease was described under sev-

eral different names. In 1784 it seems to have become of such importance that a hospital was established under royal authority for a study of its nature, and the elder Strambio was placed in charge. About 1810 Marzari first called attention to the relation between maize and pellagra, and in 1844 Balardini first suggested the theory that the disease might be due to spoiled maize—that is, maize which had undergone change by reason of the growth of fungi on the grain.

In France, early in the nineteenth century, pellagra was first observed by the elder Hameau in the vicinity of Teste.

The disease appeared in Roumania early in the nineteenth century, and a good deal of valuable literature has followed. The work of Babes should be mentioned. Sandwich has reported the disease from Egypt, and many other observers have noted it in various parts of the world, usually in sporadic form.

Geographical Distribution and Statistics.—At present pellagra is most prevalent in northern and central Italy and in Roumania. It is also found in parts of France, but its prevalence there in recent years has much decreased. It is still prevalent in parts of Spain, also endemic in Corfu, and occurs rather extensively in upper Egypt. It is likewise often reported from Asia Minor, Austria, Servia, Bulgaria and in some other parts of Southern Europe, as well as occasionally from India, Africa, Barbadoes, Mexico,

South America, and lately the southern United States.

The disease has been, and still is, a veritable scourge to certain parts of Europe.

The pellagra zone is but a small one when compared with the area over which maize is cultivated, and pellagra does occur where maize is not grown and extensively used as a food by the poorer classes.

Without quoting full data, some idea of the extent of the disease may be gained from the figures which follow: Triller states that there are (1906) 30,000 pellagrins in Roumania; that in certain parts of Italy as much as 30 to 50 per cent of the population have the disease; and that in 1889 there were nearly 73,000 sick with the disease in Italy, this being upward of 10 per 1,000 of rural population. Tuzek states (1893) that in Spain 2 per cent of the rural population are affected; that in 1884 there were 10,000 pellagrins in Italian hospitals and insane asylums. He also says that about 10 per cent of the pellagrins in Italy are mentally affected. Sandwith states that he has seen over 500 cases in the five years from 1893 to 1898 in his wards at Cairo. The disease was not reported in Egypt until 1893. More recent figures would show no decrease of these conditions. There were said to be in 1907 about 100,000 pellagrins in Italy and upwards of 50,000 in Roumania.

Distribution in the United States.—It is now an established fact that pellagra in the United States extends from ocean to ocean, and from the Gulf to Canada. The disease is therefore no longer a local or southern disease, but its wide distribution in the United States emphasizes the need of vigorous intelligent investigation into its causation, prevention and treatment, not only of the medical profession but also of both State and Federal Government.

Etiology.—The etiology of the disease is as yet in dispute, the followers of Lombroso insist that spoiled maize is the sole factor in producing the disease; some say that it is due to a plasmodium, others claim that it is anaemia of a pernicious

type, some believe that it is always accompanied and associated with amoebic dysentery. Very few, if any, claim that it is contagious. Sambin claims that it is transmitted by a gnat, namely, *simulium reptans*, while a great many believe that it is infectious.

Without going into details we may say that not a single one of these hypotheses is tenable except the last two mentioned. Some of them lack the very semblance of any support.

Many cases of pellagra occur in well nourished strong individuals, and the blood examination in acute and recent cases does not show pernicious anaemia at all. While diet and particularly a more exclusively corn diet, may act as a predisposing factor, it cannot be made a determining factor, because the disease occurs in countries or under conditions where little or no corn is consumed.

As for the amoebic theory, my personal experience has been the opposite, for I have never had a single case that was complicated with amoebic dysentery.

In spite of the failures to isolate a specific organism in pellagra as the cause of the disease, the evidence is decidedly in favor of the infectious theory. It has been frequently observed that when a single case has been found in a neighborhood, there will in a very short time be other cases, though the environments, the food supply and the nutrition of the population had not undergone any changes.

Larger outbreaks of pellagra are generally observed where there is a crowding together of many individuals into a limited space, as in prisons, barracks, schools, etc. Hence pellagra frequently has the character of an institutional disease.

Take the disease in Nashville and Davidson County. One institution with 65 inmates developed 17 cases within three years, while another institution here using the same corn products from the same mill, with over 800 inmates, and not a single case of pellagra, and still another institution, with 400 inmates, and using

the same products, and not a single case in that institution.

While, on the other hand, Dr. J. M. King, of Nashville, has reported a case in a house formerly occupied by a patient suffering with pellagra, and further still where you find several cases in one family you will invariably find that they do not all develop at the same time, but that each give a different date as the commencement of the disease.

Most of the cases in Tennessee have occurred in the poorer classes and in very unsanitary surroundings, while on the other hand some cases have occurred among the well-to-do, with all the modern sanitary improvements, and among those who are able and have the best that the country can afford.

The climatic conditions most favorable to the development of the disease are moisture and heat. It is most prevalent in the south and southeastern portions of the United States, and as a rule makes its appearance from April to September.

The disease with us is equally as common in the male as the female, and more often found in the white than in the black, and more frequently among adults than children.

Farther south it seems to be more frequent among the negro race, especially so among the female adults. We have had only three among the negroes, all adults.

Dr. Zeller, of the Peoria Insane Asylum, says that cornbread constitutes a very insignificant portion of their diet, about two ounces a day is given on an average to all patients, so that corn is not a great factor in our diet, and there are at present 200 cases at the Peoria Insane Asylum and no corn has been used for the past year, and that 80 new cases have been developed in the institution.

Corn and its products are by far the greatest article of food here at the Central Hospital for the Insane, and there is not a case in the institution that in the least resembles pellagra.

Symptoms.—In the beginning of the disease the patient complains of sensation

of heat in the mouth, throat and stomach on expiration, and the sense of taste is impaired; there is anorexia and ptyalism with an excessive flow of saliva. The tongue is usually broad, flabby and irregularly marked by red blotches, and at times the whole tongue and mucous membrane of the mouth present a raw bleeding surface, and in case of females you find the



Acute typhoid type, 3 months duration, age 47

same condition in the vagina and rectum.

The bowels are at first constipated, followed by diarrhoea and sometimes dysentery, but constipation may continue to the end.

Vertigo always present, occipital headache and insomnia, neuralgia and cramps, double vision and various other neuroses.

The cuticle assumes a dirty red appearance very much like sunburn on the exposed surfaces, especially on the dorsum of the hands, the skin at first presents a scaly appearance which very rapidly thickens, bullae often form, and often sloughing of the skin, which is aggravated on exposure to the direct rays of the sun,

and being deep-seated, it is made worse by scratching, which usually ends in a mixed infection. The erythema in most every instance in cases under my observation has been bilateral and symmetrical.

From a clinical standpoint the erythema of pellagra may be divided into three chief forms. The pernicious or wet oedematous, the dry or atrophic, and rudimentary variety occurs quite frequently, in which the symptoms are so mild that medical aid is not sought, and again we sometimes have pellagra and not have any skin lesions whatever, or so slight that it may be readily overlooked.

Muscular weakness marked and progressive, the gait slow and unsteady, walking with great care with legs apart, and picking a place for each step, there are intervals in which the ataxia is seemingly relieved, but which returns more severe. The mental phenomena are progressive from the slightest indifference to complete dementia.

The patella reflexes are most usually exaggerated, but are sometimes entirely absent.

The pellagrins avoid company and seek solitude, are distrustful and melancholy, and usually avoid conversation, and usually talk in monosyllables, prefer the dark and do not as a rule care for any assistance.

The pellagrin does not fear death, and is generally unconscious when it comes. There is usually but little fever, the temperature rarely reaching as much as 102 degrees.

Diagnosis.—As a rule the diagnosis is not difficult when you have the characteristic erythema, the stomatitis and diarrhoea, with the other symptoms just enumerated. Nurses in hospitals and asylums where a great many cases have occurred claim that they can make the diagnosis from the peculiar color of the stools.

The diagnosis in other cases being difficult and can only be made by exclusion, this is the case in those in which the erythema is wanting. In these cases the aid of the microscope is needed to

determine the anaemia, as pernicious anaemia is one of the diseases from which it is troublesome to differentiate.

Prophylaxis.—This is still in a decidedly unsatisfactory state. The observance of the ordinary rules of hygiene and sanitation will of course help some, good nourishing food helps.

There is one factor beyond all doubt that favors the occurrence and spreading of pellagra in different counties where it is now prevalent, viz: the crowding together of large numbers into limited spaces, such as prisons, asylums and other similar institutions. If pellagra should appear in these places the number of inhabitants should be decreased, or the quarters should be increased in size, and the apartments when the disease has occurred should be thoroughly disinfected, and the patient removed to himself in a well-screened apartment separate from any other building.

Last, but by no means least, the State of Tennessee should establish a laboratory and provide sufficient funds for the maintenance of the same for scientific research on this dreaded disease, because at the present rate of increase of pellagra in Tennessee and all portions of the South, it is only a question of a short time that we will stand in awe at the terrible death rate that it will cause. This is a very serious problem. Compare the number of cases reported for the twelve months preceding and then one year hence.

Prognosis.—Usually bad, but dependent on the stage of the disease, and the opportunity of placing the sick on better food and under better hygienic surroundings.

In the first stage recovery occurs in most of the cases, except in the pernicious varieties, which as a rule runs a very short course, death relieving the sufferer.

In the chronic varieties about 30 per cent recover, and the other 70 per cent either die or end in some insane asylum.

Treatment.—The treatment consists of improving the hygienic and sanitary surroundings, absolute cleanliness. The patient should have some light employment

to keep his mind off of his afflictions; this will often prevent his being morbid, and we believe that it will help the mental condition.

Good nourishing food, such as beef, mutton, cream or milk and raw eggs, and all of these the patient can assimilate.

Tonics, such as iron, quinine and strychnine are indicated; arsenic in some form should be given in as large doses as the patient can bear.

Give a salt rub at least three times a week, to be followed by a shower bath; also give from 20 to 30 grains of sodium chloride three times per day.

For the severe stomatitis use a weak solution of nitrate of silver to mop that portion of the mucous membrane that is ulcerated, raw or bleeding, and small doses of atropia to check the excessive flow of saliva.

The diarrhoea is at times very troublesome, and, in fact, we see some cases that can't be controlled. I have used opium combined with salicylate of bismuth with good results, also opium combined with acetate of lead, and as a rule the diet has little if any influence on the diarrhoea.

The erythema when wet or oedematous is best treated with moist bichloride dressings. The dry or atrophic form when there is much burning and itching is generally relieved by an application of any simple ointment. We use with good results an ointment composed of boric acid, lanolin and vaselin.

The insomnia is usually relieved by the shower baths at bed time, and when this fails any of the hypnotics will relieve this distressing symptom.

PELLAGRA, WITH REPORT OF A CASE.*

BY ENOCH H. JONES, M.D., MURFREESBORO,
TENN.

Pellagra is an endemic malady, characterized by an erythema upon the exposed surface of the body, by gastro-intestinal disorders and by nervous phenomena of

toxic origin. It may result in severe cachexia or insanity.

My apology for offering this short paper is that very little has been taught or written regarding this loathsome and dangerous malady, at least in North America, and while it is becoming somewhat prevalent in many sections of our States, amounting to an epidemic in some places, I thought it fittingly well to try and elicit an exchange of information with clinical data, etc., hoping that all might gather something. The symptoms, as I have collated from many reports and some authorities, will be clearly defined in my case report.

The concensus of opinion seems to favor spoiled grain as the potent factor etiologically; not necessarily corn or maize, but rice, wheat, barley, rye, oats, etc. There are some who doubt this as the predominating cause, but from the experimental research that has come to me favors the spoiled grain theory, noting in wet seasons in Egypt and many provinces in Europe the malady increase largely and is confined principally to corn-producing provinces. Also many experiments have been made feeding criminals on spoiled corn, producing the trouble in typical form. As reasonably claimed, the grain, when harvested, before being fully matured, wet seasons and shipping in bulk, sours and ferments in transit. Chemical and microscopical analysis have found the same spore observed in spoiled grain identical with that found in pellagrin's blood examinations. This is claimed by French and Italian authorities, who have given the subject much thought from clinical data. The reasoning of seasonable fluctuations and where the culture of corn having been abandoned, pellagra has disappeared. With all this and much more to substantiate the claims of origin, I am not yet ready to accept all without further scientific research. In reckoning with pellagra we must admit the gravity in considering the complete and final recovery, the annual and semi-annual exacerbation of the trouble is sometimes misleading and

*Read before Tennessee State Medical Association, Nashville, April 13, 1911.

deceptive in its management, while in winter most cases, for the first year or so, will appear to fully recover, to reappear with increased aggravation in spring, and sometimes in fall as well. The mortality in many instances is very great, especially when the stage of insanity is reached. Most statistics collated thus far are from asylum reports, hence the great mortality. Therefore the advanced cases with the involvement of the central nervous system. Early diagnosis and treatment offers more for mitigating and general relief. We are sure we have no specific, and many say medicines play very little part in the treatment and management of pellagra. Arsenic with adults and chloride of sodium with children are the mains, of course meeting conditions as they arise in stomatitis, gastro-intestinal complications, burning sensations of the erythematous surfaces so very annoying to most patients, can all be at least mitigated or allayed. The diet should be easily assimilable and highly nutritious and selected with care, and more abundantly given than usual to the sick, notwithstanding the diarrhoeal disturbances as they are perhaps trophic largely and not inflammatory in nature.

CASE.

L. S., age 35, married, family history good, with no hereditary predisposition whatever, applied for treatment in spring of 1910, about May 1, with the characteristic skin lesions involving the exposed surfaces—hands, forearms, face and neck. The patient, in giving a history of his trouble, called it sunburn, and said he had the trouble to some extent for two or three springs, but had taken no treatment. Being a farmer, had been able to work all the while; has wife and four or five children. Stated also that his diet for several years had been largely of corn, mush and milk, the members of his family not eating of the mush. None of the family has been afflicted with the trouble, two of the children sleeping with him all the while. He had for some time secured his meal from a small mill in his neighborhood. I elicited the fact that the mill used the Northern

shipped corn mostly. The diarrhoea troubled him some for several weeks. The patient very much emaciated, very nervous, ataxic and unsteady in his walking, had to give up work, in fact, could hardly get about.

TREATMENT.

Treatment in the main was arsenic, iron and strychnia, pushing the arsenic to toleration. He, living in the country, whenever he would get out of his arsenic, the trouble would become more aggravated. Finally he began improving until he appeared well, went to work and has been all fall and winter. My advice for him to visit my office regularly has not been kept. He says he is as well as he ever was, has no trouble at all and says there is no need of his coming around the doctor. Whether he is really well or will have a recurrence remains to be seen.

DISCUSSION.

Dr. J. M. King, Nashville—"Mr. President: I had the opportunity of seeing the case Dr. Jones has described. Pellagra is getting to be quite an interesting subject to people of the United States, particularly those of the southern section. It is hardly worth while to discuss the cause here, because it is impossible for us to arrive at it. The Italians have presented one phase of it, and Sambon, who is doing work now in London, has presented another phase of it. It is like cancer—we probably never will arrive at the cause, and it is not altogether clear that eating cornmeal mush has anything to do with the disease.

"We have had forty or fifty cases about Nashville. I have seen a number of these, and the clinical symptoms are about as Dr. Jones described in all of them. The first symptoms that were usually observed in our cases here were an erythematous rash appearing on the face, the back of the hands and on the dorsa of the feet, and following these, as a rule, there has been stomatitis and later some inflammation of the vagina and vulva, the nervous symptoms coming later. Emaciation and diarrhoea as a rule, follow stomatitis. In other rare cases you will observe the nervous symptoms, emaciation, weakness and great prostration before the erythematous rash appears. I saw them in one young woman, who was near death before any erythema ever appeared, and then it was very slight, on the elbows, the forearm and on two or three knuckles of the hands. She was from Florence, Alabama, and was sent to Mobile for transfusion and died on the way. We cannot always rely on erythema as the first sign of pellagra. In the seventeen or eighteen

children we had in charge from one of the orphanages here, most of the children had erythematous eruption as the first sign on the feet, the face and the hands. Of those seventeen or eighteen children two died. There is one which I think can scarcely be said to be well now. The others have been pronounced practically well, since there has been no recurrence for two or three years. For some reason we all know the sun seems to have something to do with producing erythema. The young woman had not been subjected to the strong rays of the sun, perhaps on account of emaciation and weakness.

"When we come to the subject of treatment it is problematical. In the line of treatment we have pursued, hygiene has been a great factor, together with the administration of iron, quinin and strychnia. I have not pushed arsenic too much; one-half to two or three drops, three times a day, is a dose sufficient, with nutritious food and the best of nursing, with probably bismuth or some preparations of bismuth for the diarrhoea. Here we have found the best applications for the severe stomatitis to be washing the mouth with peroxid of hydrogen three or four times a day, and then after that washing with listerin. Of course, other antiseptics might do as well, but I have used listerin. We have washed the patient's mouth after using peroxid of hydrogen with listerin, and painted the parts with a silver nitrate solution of 15 to 20 grains to the ounce, and equal parts of glycerin and water once a day. That seems to agree better with the inflamed mucous membrane than anything else. Some writers on the subject recently say they have been using urotropin internally and have found some benefit from it. Whether the improvement has been incidental or due to urotropin has not been positively ascertained. You may take a case of pellagra with severe stomatitis and erythema and emaciation, with diarrhoea, and put that patient on treatment; if the patient has sufficient vitality he will improve wonderfully. I have seen patients in four or five days after being put on this treatment show marked improvement. So it may be that urotropin has nothing to do with the improvement.

"The question of the communicability of the disease is a very pertinent one. I have an open mind in regard to that. I can hardly think there is any possibility of communicating it from one patient to another. We have had some cases which seem to indicate that the disease is contagious and infectious because I have known of the case of a man who contracted the disease after his wife contracted it and died. I have known two cases in Mississippi where a daughter first had the disease and then the mother contracted it. Dr. Bass, of New Orleans, reported a case something like this: A family having contracted the disease moved out of a house and another family that moved in likewise contracted the disease. Dr. Runyon told me of cases at Clarks-ville where the disease occurred in two negro sisters. We cannot trace it to a direct contagion or infection,

so we are still at sea with reference to communicability.

"There is one other point I would like to refer to briefly: We have derived some benefit or value from using salt internally and salt rubs and salt baths."

Dr. F. J. Runyon, Clarks-ville—"I want to ask those in discussing this paper to state whether menorrhagia has been a symptom of prominence in any of the cases they have had. Personally, I have had comparatively few cases of pellagra, but I have seen this symptom in two cases.

"In regard to the treatment, I notice that Dr. Martin, of Hot Springs, Ark., reports splendid results from one of the newer arsenical preparations, namely, soamin."

Dr. William Litterer, Nashville—The etiology of pellagra is certainly in a chaotic condition. Each investigator has his pet theories, and can make you believe almost anything. I shall not discuss that phase of the subject other than to say that I think the general consensus of opinion is that the disease is contracted through the intestinal tract. That it is some kind of intoxication, whether it be taken by the food or produced by some bacterium, we do not know. It has been observed in quite a number of cases of pellagra that the amebae dysenteriae can be found. Likewise uncinariasis (hook-worm) have been associated with the malady. Some authorities believe these parasites to be predisposing factors in pellagra, but this view is not tenable, since the majority of pellagrins are not infected with these parasites.

I rise especially to bring out a point that may be of interest concerning which Dr. Runyon has spoken, namely, the use of some form of arsenic such as soamin, and especially salvarsan, in the treatment of this disease. Torrance and McLester, of Birmingham, gave intravenously salvarsan in three cases of pellagra, and they report marvelous results. This report was published in the *Journal of the American Medical Association* quite recently. I think Dr. John Overton has had a case of pellagra here in Nashville in which he resorted to intravenous injections of salvarsan, but I do not know whether he has gotten any results or not."

Dr. Overton—"No results."

Dr. Litterer—"Arsenic certainly has a beneficial effect in some cases, and it would be well to administer salvarsan with a view of giving it a trial."

Dr. John Overton, Nashville—"I do not expect to add anything to the discussion of the etiology and symptoms of pellagra and the general mode of treatment. I would like to say something as to the treatment of extreme cases when we first see them. As a general thing, it is proper to employ tonic treatment for a week or so, and unless decided improvement is shown, I think something more radical is justifiable, such as direct blood transfusion. Cole has obtained a remarkable percentage of recoveries in severe cases, but he limited his treatment purely to these cases. I do not think we should look at it

in the same light, since it has been proved of decided benefit in cases which appeared beyond all hope, we should employ it a little earlier, and in my opinion this should always be done. Next to this I believe salvarsan should be tried because of the very decided beneficial effects shown in some cases already treated by this method. I have here a picture of a case. I saw the patient, a man, two weeks ago. He is between sixty and sixty-five years of age. He has had symptoms since the first of the year. He informed me that he never had anything similar in his life. He had all the prominent symptoms of pellagra. He came to me in an emaciated condition, with all the positive signs of the disease. He was a little bit irrational at times, while at other times he appeared rational. I advised transfusion. I sent him to the hospital, and thought I had obtained a donor, one of his children, but she later refused. On entering the hospital his temperature was found to be subnormal. He would not take any nourishment and steadily continued to go down. I tried intravenous injection of salvarsan; I gave him forty-five hundredths of a gram in 150 c. c. solution without any apparent immediate results. That afternoon he vomited the medication and the salivation seemed to increase, otherwise there was no change in the symptoms. Since then he has gone steadily down."

Dr. W. J. Breeding, Ravenscroft—"I do not rise to attempt to discuss the cause of pellagra or the treatment of any particular phase of the subject, because I fully realize that but little is really known about it. I would like, however, to report a case of pellagra seen in a family that was heavily infected with hookworm disease. In an anemic family of eleven living in one of the rural counties of this state all were found to have a heavy hookworm infection except the mother. A young lady in this family, twenty-seven years old, who had been confined to bed for several months, presented the history, the skin, intestinal, and other manifestations of pellagra, and it was so diagnosed by three members of this society whose ability cannot be questioned. The physician in charge secured over 600 hookworms after the first treatment with thymol, although she is now free from hookworms and is out of bed and much improved, yet her recovery is not complete because of the pellagrous symptoms which still persist. Now, this case brings up the question in my mind whether or not unciniriasis is a factor in the causation of pellagra. I would like to know whether it is a possibility or not. Whether the pellagrous symptoms preceded the hookworm infection or vice versa I am unable to say, but that they did both exist in this patient at the same time I can testify. I merely report this as an observation."

Dr. W. Frank Glenn, Nashville—"There are only one or two points I want to make a few remarks about, admitting at the same time that we are as yet in the dark in regard to the cause of pellagra. I think it was three years ago this summer that the first case was seen in Nashville, and if I remember rightly there were several orphans confined

to the Baptist Orphan Asylum, two children from Newport having pellagra when they came. In two years after that there were seventeen cases in the same asylum. These children were associated together all the time. Of course, at that time there was very little literature on the subject. These cases were brought to the attention of the Board of Health, who were interested in the disease, and the children were isolated, placed under the most favorable hygienic conditions, and were given iron, strychnia and arsenic, salt baths, etc., with good effect. As I remember, there were fourteen cures out of the seventeen, and two of the children were practically dead when they went there, and the treatment resorted to at that time is as good as any known treatment today.

"As to the communicability of the disease, I think those cases, two at first, with fifteen more in a little over a year, is a positive conclusion that it is at least communicable, if not directly infectious. One of the teachers, a healthy young girl of twenty, came there, and was cautioned not to eat any cornmeal. She did not touch a mouthful. She was in vigorous health, and in less than twelve months she developed pellagra on the dorsa of the hands, on the forearms, on the neck and face, and, as I have said, she had never eaten any cornmeal. We sent to Washington and Dr. Lavinder came to Nashville and investigated these cases. I asked him whether he did not think the disease was contagious or communicable, and he said no. I said to him, 'Will you bring your family, wife and children, and have them live at the orphan asylum for twelve months?' He replied, 'No, I would rather not.' While we are still in the dark, I do not believe good cornmeal will ever produce pellagra, but I do believe that it is at least communicable. I would not want myself or children to live in close contact with pellagrous patients at all times."

Dr. L. L. Shedd, Knoxville—"In regard to the cases of pellagra brought to Nashville from Newport, I had a conversation with one of the physicians from Newport about these cases, and he stated that the children did not have pellagra when they left there; that he was the family physician and that he saw the children frequently and that there was nothing the matter with them when they left Newport, and that it was all a mistake about them having pellagra when they left for Nashville."

Dr. Glenn—"The child certainly had it when it came to the Baptist Orphan Asylum."

Dr. Shedd—"I place a good deal of confidence in what Dr. Burnett, of Newport, says, as he is a very competent man.

"In regard to the question asked by Dr. Runyon as to the symptom, menorrhagia, I wish to speak of two cases which came under my observation. The first was a case seen in consultation in the City of Knoxville, who was brought to the hospital for a curettage for a supposed abortion. The cutaneous symptoms were supposed to be due to some septic absorption. The diagnosis was made by one of the

internes in the Lincoln Memorial Hospital. This woman had marked menorrhagia and it was for this symptom that she was sent to the hospital. The other was a case of Dr. C. P. McNabb's, of Knoxville. This woman had marked menorrhagia, and a diagnosis of probable carcinoma was made. She was sent to Philadelphia and a hysterectomy was done by Dr. Deaver. She had only a slight eruption on the hands, and after she was operated upon, Dr. McNabb wrote to Drs. Deaver and Tyson and asked them what they thought of its being pellagra. They replied that they had had no experience with pellagra, but that it was not carcinoma, so the case proved to be one of pellagra. This patient had only a slight eruption upon the hands, which soon disappeared. She had no other cutaneous manifestations but developed marked gastro intestinal disturbance, became extremely anaemic, had marked delirium, and finally developed maniacal symptoms, and later died of exhaustion. This was a case in a lady who had been in the sun very little, had been sitting on the porch some and thought the eruption due to sunburn. That was the thing which led Dr. McNabb to believe it to be a case of pellagra.

"Another case was referred to me from an adjoining county, the lady having moved to our city, who had distinct symptoms of pellagra for two years in succession. She is now seven months advanced in pregnancy and her case is going to be interesting. The first year, while she still had the active symptoms, she moved away from the locality and apparently got well immediately. She then went back to the same locality and the pellagrous symptoms promptly returned. She then moved to Knoxville and again the symptoms disappeared. I have advised her not to go back to that locality any more. Some of these cases seem to be cured, but it is a question whether or not they are ever cured.

"One woman who claimed to have been cured by a fake appliance called 'Oxydonor' two years ago, died last week from pellagra."

Dr. B. J. Rash, Nashville—"I want to speak of a case I got from Jacksonville, Florida, a little over two years ago, and she had a fully developed case of pellagra at the time. Doctors had been treating her for some form of eczema, which extended over the elbows and all over her face and neck. She had gastro intestinal symptoms, and I had two doctors to see her. Both agreed with me that she had pellagra. She had an elder sister, forty years of age, who waited on her and gave her the treatments. The other sister in the last few months is developing the symptoms of pellagra.

"As to menorrhagia. I will say that this woman had amenorrhea after the disease began. After she came here and was in the very worst stages, she developed menorrhagia. She got a great deal better, and all the symptoms were very much improved. She developed an abscess of the tooth and was very weak. A dentist came in and extracted the tooth. She gradually declined and died within four or five days thereafter."

Dr. Albert S. Dabney, Nashville—"In reference to the intestinal complications, last spring a boy, seven years of age, from an adjoining county was brought to me, and when I first saw him his case was a most typical one, according to Dr. King, who had seen more cases than anyone else at that time in Nashville. The boy had a brawny induration across his face, on the back of his hands, across the shoulders and feet. There were large blebs ranging in size from one-quarter of a dollar upward which covered the dorsum of both feet. This boy gave a typical history of diarrhea in previous seasons, and he had some convulsive attacks three or four years previous. I put him on the ordinary treatment, sent him back, and one day his father telephoned me that he had strangled lying on the bed. He ran his finger down his throat and pulled out a large worm. He was given santonin and calomel and passed thirteen large round worms. I wrote for a sample of feces to see if I could find hookworms, but never got it. The boy, at the time I saw him, was fat, apparently strong and robust considering his condition. When next I saw him, about three weeks later, the scalp was involved and was as markedly emaciated in that short time as could be. He died half an hour after I saw him. His sister, also a dirt eater, developed a brawny induration on the back of the hands and dorsum of the feet. She looked as if she had worms. I gave santonin and calomel, and she was delivered of several worms. Unfortunately this little girl was burned to death shortly afterwards.

"As to the infection of the ulcers, we could not keep this boy still at all. He would complain all the time of itching and would scratch constantly unless held, which was done all the time when awake. Upon one occasion, while his fingers were covered with blood and serum from the ulcers, he wiped me across the eye. That has been a year ago, and I do not know what the result will be, certainly I do not believe it can amount to anything."

Dr. C. N. Cowden, Nashville—"I want to make a confession. I treated one or two cases, not knowing their nature until it finally dawned on me that I was treating cases of pellagra. I have got to the point where I am on the lookout for the nervous and gastro-intestinal disturbances quicker than I am for the rash. I have seen four or five in the last twelve months, and in these the last symptom to develop was the rash. In others the rash comes on early. I remember treating one case for two or three months in a sanitarium close to the city for an infection of the skin or a cellulitis, or something of that kind. I had been treating this case with every kind of dressing, and through the courtesy of Dr. Tucker I went out to the pest-house, he being in charge of the cases out there, and at the time, while I was examining patients, it dawned on me that this was a case of pellagra I had been treating, and it proved to be such. That woman is living today, but I had treated her for two months without any seeming benefit whatever.

"Again, another patient fell under our observation, who had no eruption at all, but went on and died

with neurotic symptoms, attended with gastro-intestinal catarrh, with an extremely red, flannel-coated tongue. They all develop that sooner or later. I looked at the tongue immediately and saw its extremely red condition. I believe that is one of the diagnostic symptoms, namely, extreme redness of the tongue."

Dr. M. C. McGannon, Nashville—"I want to call attention to one thing that may possibly cause error in the early symptoms of pellagra. I have made one mistake which I want to confess in the case of a young girl who has been under my care for two years. She has now well developed pellagra. When she came under my observation there was nothing on microscopic examination to show that she had any specific lesion. I was perfectly satisfied she did not have gonorrhea. I was unable, however, to account for the inflammation of the vagina. It was not of a severe type, but it was very intractable to treatment. It would sometimes improve, and again it would become quite purulent. She had associated with it the symptoms of vaginitis, irritation, itching and redness, and sometimes a slight burning upon voiding urine. This patient has steadily progressed until now she has well marked symptoms of pellagra without any skin eruption. But she has all the other symptoms, and in consultation with two other physicians they say the same thing, that it is an undoubted case of pellagra. I want to call your attention to this particular symptom as an early one in cases of pellagra. It is one that may lead us astray. I have seen three or four patients in whom this was the first symptom complained of, and when these vaginal symptoms present themselves we should have in mind the first symptoms of pellagra."

PRACTICAL LABORATORY WORK FOR THE GENERAL PRACTITIONER.*

BY NEWTON EVANS, M.D., NASHVILLE.

It is my purpose in this paper to try to stimulate a little greater interest, especially on the part of the men in general practice in the smaller cities and rural districts, in some of the simpler laboratory procedures which can be done in the doctor's office, and which are of incalculable service in scientific medicine, and, if possible, to persuade many who do not now do any of this work to undertake it.

In the present state of advancement of medical science it seems almost as futile and foolish to neglect to take advantage of the use of the instruments and methods of precision in the diagnosis of disease as

it would be for modern business men to ignore the railroad, the telegraph, the telephone and the typewriter. The stethoscope, the clinical thermometer, the blood-pressure apparatus, the hemoglobinometer, and pre-eminently the microscope can no more be neglected with impunity by the scientific physician than can the telephone by the business man or the railroad by the commercial traveler.

By some the importance of laboratory methods have been sharply assailed, and it is well to be cautioned against an undue regard for any one method to the detriment of others. Some years ago a prominent medical educator wrote: "The undue attention which the medical curriculum gives laboratory study and microscopic investigation impresses the student with an exaggerated sense of the importance of the evidence they afford. The result has been a dangerous neglect of the study of the clinical history by our younger men." This undoubtedly is true as applying to many of our best medical colleges, but I venture the opinion that this cannot be said as yet of many of our schools in the South. And further, the great majority of us, particularly physicians living in smaller communities, where we do not have access to public or city laboratories, make use of laboratory methods far too little rather than too much. I was told recently of a certain town in an adjoining State, with a population of four or five thousand, where fourteen physicians are practicing and not one among them owned or used a microscope.

If any phase of the science and art of medicine can be called the most important it is that of diagnosis. The really greatest physicians of the past and the present have been great because they have been great diagnosticians. Diagnosis is the foundation of scientific medicine and the exact methods of chemistry, physics and microscopy are indispensable adjuncts to the physical senses in ascertaining the presence or absence of pathological conditions.

It was my lot for several years to do a general practice in a small city, and as

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the result of giving particular attention to those laboratory methods which could be used in conjunction with that kind of a practice I have been impressed with its value and practicability.

The great value of the results of the examination of the sputum for tubercle bacilli, especially in the early stages of the disease, needs no argument here. The stain can be made and the slide examined in fifteen or twenty minutes or less time, especially if the bacilli are present in any great number. In the incipient cases the value of a positive finding is almost incalculable. One case of this kind comes forcibly to my mind. A young man of the most vigorous appearance and splendid physique had been suffering for about three or four weeks with slight fever and some cough. I at once made an examination of the sputum and found the bacilli in considerable numbers. It made the diagnosis positively certain, while without that examination I might not have been absolutely positive. As the result I insisted upon immediate and active treatment, which resulted in a clinically complete recovery. I believe that procrastination in such a case, or half-hearted treatment, would have been almost criminal negligence, and without an absolutely positive diagnosis of the presence of the germ one would be tempted to wait for some more positive findings in the physical examination, thus allowing the disease to progress to such a stage that recovery would be less probable or entirely impossible.

The great amount of help that is accessible in systematic examination of the blood is of wide range and applicable in a large number of diseased conditions, but there are a few simple tests which can be applied in the physician's office and seem almost indispensable. The simplest and quickest means of testing the percentage of hemoglobin in the blood is the "Talquist scale," with which the majority of you no doubt are familiar. It is sufficiently accurate for office and bed-side work. The presence of the malarial parasite in the blood is easily demonstrated in the fresh

specimen or in a stained smear. They are, however, discovered with difficulty after the administration of any quantity of quinine. The positive diagnosis of malaria by the microscope is very helpful, especially in children or in adults when the paroxysms are not typical or where the malarial condition is associated with other diseases. The making of blood-smears and their staining is so simple that any one can do it with a little practice. The use of such a stain for the blood as Wright's or Hasting's is easy and the reagents will keep for months without deterioration. (The same is true of the reagents used for staining the tubercle bacillus.) From the stained blood smears it is also possible to diagnose other diseases of the blood such as pernicious anaemia, leucaemia and the extreme degrees of leucocytosis. For making an accurate count of the number of white cells and of red cells the blood counting slide is necessary.

In the field of diseases of the skin which to me are often difficult to differentiate, some are caused by parasites which are easy to find and recognize with the microscope. Among the common types are the so-called ring-worms, caused by the fungus *trichophyton tonsurans*. I recall three cases of this kind seen within a few months in which it would have been impossible for me to make an absolutely positive diagnosis without the aid of the microscope. Two were cases of ring-worm on non-hairy surfaces in which the inflammatory reaction was so intense as to hide the typical characteristics. The third was a ring-worm of the beard, in which the lesions were of large size with much proliferation of tissue, being elevated a half-inch or more above the skin surface, so that at first sight they looked like cancerous growths. In these cases frequent applications of strong solutions of mercuric chloride or other active germicides result in prompt recovery, while if the true nature of the process were not determined and a less drastic method of treatment pursued, the results would not be so promptly satisfactory. To find the para-

site it is necessary to take some of the whitish scales from the surface or some of the dead hair roots in the case of a hairy surface and drop upon them on a glass slide a few drops of 10 to 30 per cent caustic soda solution, cover with a coverslip and examine after a few minutes with a high power lens. If the fungus is present it is easily seen as clumps or threads of the small round spores. Unstained objects of this kind are much more easily seen with a small amount of illumination.

There is one class of diseases which do not receive the attention from a scientific standpoint by the general practitioner which I believe they deserve. I refer to gastric disorders. They are very frequent, occur for the most part among the better classes and in a large proportion of the cases are relieved by proper treatment. In many cases it is absolutely essential in order to make a correct diagnosis to examine the stomach contents by means of the chemical tests for Hcl and the organic acids. The simplest and most satisfactory methods of ascertaining the quantities of free Hcl, combined Hcl and "total acidity" of the gastric juice are combined in the "Toepfer method." For this test the only necessities in the way of equipment are an n-10 solution of sodium hydroxide, a graduated burette and solutions of the three indicators, phenolphthalein, alizarin and dimethyl-amido-azo-benzol. In a number of very troublesome stomach cases the test meal has given positive knowledge of the condition present; for instance, "hyperchlorhydria"; and the treatment which it was possible to give in view of the definite knowledge obtained has yielded such satisfactory results that I have a very high appreciation of the value of the test meal. The use of the stomach tube does no harm and in most cases is very easily accomplished. The chemical test of the stomach fluid for lactic acid is easily made and is of much value in suspected cancer of the stomach.

Among other conditions which are elucidated by simple and easily performed laboratory tests we might mention the fol-

lowing without taking time to dilate upon their obvious importance:

The microscopic examination of urine for pus cells, blood cells and tube casts.

The ordinary chemical tests of urine.

Tests for occult blood in the vomitus, test meal and the feces.

Microscopic examination of the feces for the amoeba of dysentery, as well as for the eggs of the various intestinal parasitic worms, which are extremely common conditions in this part of the world (hook-worm, eel-worm, dwarf tape-worm and the whip-worm).

The staining and microscopic examination of urethral and other discharges for the gonococcus, and of the fluid from spinal puncture for the meningococcus.

Ordinarily there is no adequate immediate financial return for the man who makes these important laboratory tests in his own practice, hence it is often a great temptation to neglect them even when we know that it would be helpful and are provided in our office with the means of making the examination. But it will pay in the long run, particularly in the added success of your practice.

On the other hand, there are various laboratory procedures which are indispensable in the diagnosis of certain conditions but which cannot well be done in an office laboratory on account of the apparatus necessary or the degree of skill or the amount of time required for their use, but must be done in a regular laboratory and by skilled laboratory workers.

The Wasserman test for the presence of syphilis and the Noguchi test for the same purpose are good illustrations of this class of laboratory tests. The serum tests for syphilis are now recognized by all who have used them to be of the greatest positive value, but the equipment necessary and the reagents used and the training necessary for its execution make it almost impossible except by skilled workers in well-equipped laboratories. The microscopic examination for the spirochete pallida requires an amount of care and skill

which can rarely be obtained except in a regular laboratory.

Another procedure which ordinarily is not done and should not be done except by a trained pathologist is the diagnosis of microscopic sections of tissues from tumors, etc. The preparation of autogenous vaccines, consisting of killed bacteria in certain infectious conditions, is a most valuable bacteriological procedure which cannot well be done outside of a well-equipped laboratory. The same is true of all methods which have to do with the handling of bacterial cultures.

But the plan of sending *all* laboratory work to the specialist is not the ideal plan, and even in the larger cities where the well-equipped laboratories are close at hand the better class of physicians maintain their own office laboratories in which the simple tests can be made at once without the delay and expense of sending specimens to the larger laboratories.

I think it is the duty of the teachers in the medical colleges who teach microscopy and allied subjects to make the student see very clearly the difference between the laboratory procedures which have simply an educational value and on the other hand those which have an immediate practical importance, and in which every man should be so thoroughly trained that he is master of them, can perform them with absolute assurance and can trust his own findings, such, for instance, as the recognition of tubercle bacilli of the malarial parasite and of urinary casts. I am satisfied that many physicians graduate from our medical colleges without that amount of practical experience in these simpler methods which he ought to have. I believe that the best method of giving the large amount of practical laboratory work which the student needs is in the hospital laboratories, where as an interne every young physician ought to be required to serve for one year before being permitted to begin practice. In at least one important American school this plan is now being introduced. In the medical department of the University of Min-

nesota the class entering in 1911 will spend five years in their medical course, the last year being spent in hospitals as interns before receiving their diplomas.

Probably the great majority of the physicians now practicing throughout the country have not had the training to enable them to do this office laboratory work satisfactorily. For such it is possible to learn to make the simpler tests by spending a few weeks in a good teaching laboratory, and there are numbers of books, laboratory guides which are of great service after one has become fairly proficient in the manipulation of the microscope. Outside of the cost of the microscope, the equipment necessary for the simpler tests can be purchased for a very small amount, from \$15 to \$25.

The best plan is to have a separate room for the laboratory work in connection with your office, though it may be small. It should have good light, preferably a large window looking to the North so as not to be troubled by the direct rays of the sun in doing microscopic work. If you cannot have a separate room, arrange a separate table with an ample top and one or two small shelves for the reagents and reserve the table space entirely for laboratory purposes.

I believe the plan is the most satisfactory where two physicians are associated together in practice, where one can be prepared and can do the greater part of the necessary laboratory work. In most cases the younger men who have more recently worked in the medical college laboratories will be better fitted to do that part of the work.

DISCUSSION.

Dr. E. A. Timmons, Columbia—"This is an excellent paper as a whole, and I heartily endorse it, so far as it goes. There is one feature, especially, that I have observed in my work with the microscope that was not brought out very forcibly by the author of the paper, and that is with reference to microscopical urinalysis. I remember some two years ago I passed a young man through two applications for life insurance within a month of each other. I made the usual chemical analysis of the urine, and, so far as the results were concerned, they showed up all right,

even the specific gravity met the requirements. Shortly after I had passed him with the last company I was incidentally informed that he was in bed with a general edematous condition from an acute exacerbation of a chronic Bright's disease, and that more than likely his time here on earth was short. That got me in a rather close predicament with the two companies, although I had carefully gone over the urine, as had been required by the companies, and the two doctors that were attending him both mentioned that they had examined the urine chemically, and that there was not anything suspicious about it; that the specific gravity was normal; there was no sugar, no albumin, and very little sediment in the urine. So when they told me that, I told them to bring me a specimen of urine, that I wanted to wedge myself against any predicament with the two companies if they had to pay insurance in less than two months after I had passed him. Both Dr. Horace Thomas and Dr. George Williamson got a specimen of urine and came to my office. We went over it together chemically and there was nothing in it to indicate any serious trouble with the patient. I centrifuged the urine, put it under the microscope and found quite a number of granular and epithelial tube casts which made out the diagnosis. In other cases with reference to kidney trouble, while the chemical analysis has brought out nothing, yet microscopical analysis will reveal to you what you cannot get otherwise, and I heartily agree with Dr. Evans that if we want to get down to the bottom of the trouble that some of our patients had at an early time, in order to save them, we should add to our laboratory the use of the microscope whenever we can, but fortunately for myself the patient that I refer to, instead of dying, pulled through and is quite well today, but, of course, at times has his troubles from the condition that will always be with him as long as he lives."

Dr. William Krauss, Memphis—"Just a few words in regard to this paper. The facts presented in it are so obvious that they admit of no discussion. I would like to emphasize the importance of examining more feces under the microscope. Of course most doctors think they are too nice to do anything of that sort, but until they make an attempt to do so they will never appreciate how much they can find out by such an examination. If you find nothing but leucocytes, red blood corpuscles, it may mean that there is something the matter with the intestinal tract that is worth looking for.

"In one respect I differ with Dr. Evans, and that is, we do not get sufficient monetary returns for examinations of this kind. A microscopic examination is the best service you can render a patient, and if one has not the nerve to charge for it, he ought to do so. The service is well worth what you charge for it."

CALCULUS OF THE KIDNEY.*

BY E. DUNBAR NEWELL, B.S., M.D., CHATTANOOGA, TENN.

Why stones form in the kidney or the bladder has always been a subject for serious and careful study, although we know in many cases why and how these stones have been formed, even today the *modus operandi* of the formation of thousands of cases of stone in the kidneys cannot be fully explained. There are some general causes that when present always tend to the formation of a stone. Any foreign body that passes into any portion of the urinary passages will collect around it urinary sediments and thus become the nucleus of a calculus, and this foreign body may be a blood clot, a piece of bullet, a piece of catheter, a splinter of bone, a needle, a thread of necrotic tissue, or it may be the eggs of the distoma haematobium, or it may be the filari sanguinis. The reasons for this is in a simple law of physics; a flowing stream will carry sediment that will be deposited just as soon as the current is retarded and the greatest amount of sediment will occur where the current has been most retarded—that is nearest to the point of obstruction—the foreign body. We know further that a single crystal deposited from the urine, if it is deposited where it can lie quiet, will form the nucleus of a calculus. The more concentrated the urine the more easily these crystals are precipitated from the urine, and this is true even if the crystals are in solution and the urine perfectly clear. In other words, a urine of high specific gravity (unless it is caused from diabetes) is always a urine that has the physical properties that are favorable to the formation of a stone. The danger signals should be a highly acid concentrated urine, such as we find in gouty and rheumatic diatheses, and the alkaline urines. The highly concentrated acid urines predispose to the formation of uric acid calculi, and the alkaline urine to the phosphatic calculi. The sedentary gour-

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mand of the office is much more liable to calculi than the active farmer with his simple diet, and this gives us a lesson in the proper treatment of the cases that come to us with highly acid concentrated urine from inactivity and too much rich food—let them drink copiously of alkaline waters, take exercise and eat simple food. The alkaline urine is much harder to correct—I do not mean alkaline urine from inflammation or decomposition—and in spite of Hare and in spite of Wood and Barthlow, the mineral acids they recommend to make alkaline urine acid are, in a great majority of cases, worthless. Personally, the only drug that I have found that had the slightest influence is Lithium Benzoate, and it will nearly always do the work. Another important cause for calculi in the kidney is inflammation of the kidney and the formation of necrotic areas and necrotic filaments which holds the urinary sediment on its roughened surface on the one hand and in the other acts as a foreign body to become the nucleus of a calculus. Still another factor of great importance is the stagnation of the urine by retention—whether from paralysis, enlarged prostate or urethral stricture. This is largely due to another simple law of physics—flowing water will carry in solution and in suspension organic and inorganic substances that are quickly deposited or precipitated, when the water is not moving or flowing. This stagnation in the urinary flow probably accounts for the great difference in the number of males who have urinal calculi as compared with the females—it is usually put at 95 to 5. This stagnation probably also accounts for the reddish granular deposit of urates that about 50 per cent of all newborn babies pass, and that so frightens nurses, mothers and young doctors, and this is why so very many children in the first few years of life have renal calculi—the nucleus of the stone was formed in utero when the urine is so concentrated and the flow stagnates. About 25 per cent of all cases of renal calculi occur in children, and the next most prolific age is after the fortieth year.

The difference between the uric acid infarcts, renal sands, renal gravel and stone is in size, as the composition is usually the same. By stone we usually mean a calculus or concretion that is too large to pass through the ureter. There are three distinct groups of calculi, divided according to their composition:

First, uric acid, which is the most frequent of the three types and is composed of uric acid, pure or in composition with urates or oxalates or covered with phosphates. This mixing and coating of the uric acid calculi with oxalates and phosphates is very important from a diagnostic point, as the calculi composed purely of uric acid and urates is entirely organic and the X-ray penetrate it easily, and it is impossible or very difficult to get a shadow or picture that is clear enough in outline to make a correct diagnosis. However, the great majority of all uric acid calculi have enough of the inorganic calcium, oxalate or the phosphates mixed into their composition to obstruct the rays and thus to throw a shadow on the plate for the skiagraph.

The second variety in frequency is the calcium oxalate. This, too, is frequently mixed with uric acid, urates, calcium carbonates and phosphates; this is the hardest variety of urinary calculus and are often called mulberry stones, because of the roughened surface. This stone is readily shown by the X-ray.

The third variety in frequency is the phosphatic calculi. This, too, is inorganic in composition and takes a picture easily.

The cystin and xanthin calculi are organic, and if pure would be hard to detect with the X-ray, but they are seldom found without some admixture of the inorganic oxalates and phosphates. However, they are both very rare and need scarcely to be considered.

Calculi may be formed in any part of the kidney, but they are usually formed in the renal calices and the renal pelvis. A calculus formed in the parenchyma is usually small. A stone may be very small or may weigh as much as two pounds; there

may be one or two hundred stones in one kidney; however, in 50 per cent. of the cases there is only one stone.

I cannot better describe the pathological condition caused by a stone in the kidney than by quoting the following from Von Bergman:

"Every calculus irritates the tissue with which it comes into contact, and it may produce chronic inflammation and degeneration changes in the renal parenchyma. While these changes are comparatively slight as long as the urine remains aseptic, they may result in suppurative pyelitis and nephritis, as soon as the urine becomes infected and undergoes alkaline fermentation. If the urine remains aseptic the endarteritis and periarteritis will stimulate the connective tissue between the tubules to an abnormal growth, which will strangulate the tubules and cause them to atrophy. Every renal calculus produces a certain amount of urinary obstruction and this exerts a destructive influence, greater or less according to the position of the stone. The dilated tubules may be destroyed, or the renal calices and the renal pelvis may dilate more and more until the kidney is transformed into a fibrous sac. Sometimes the kidney simply atrophies and shrinks without dilation. This process may go on until the whole kidney is no larger than an almond. A third possibility of an aseptic calculus is that the stone may lie for an indefinite period in the kidney without producing much recognition except a mild interstitial nephritis in its immediate vicinity."

This well expresses the pathological result, and shows clearly how closely we must watch these cases of known or suspected renal calculi. The usual termination in these cases—when the stone is not early removed by operation—is secondary infection followed by pyelitis and nephritis and the conversion of the kidney into a great loculated abscess cavity. The secondary infection of the kidney may come from the blood stream or from the lower urinary passages, probably most frequently from the lower passages, and this is especially

true if the patient has gonorrhœa. Another pathological fact of the greatest importance is the frequency of the trouble in the second kidney; even when there is no pus, but a simple calculus nephritis in one kidney, the other kidney usually undergoes some hypertrophic changes at least, when infection begins with suppuration, the injury of course will be far greater and more serious. The pus from the affected kidney infects its ureter to the bladder and from the bladder it is a quick and short passage for infection to travel up the second ureter to the second kidney. Legneu found that in seventy-six cases of calculus nephritis the second kidney was free from calculus only thirty-eight times, while in only four instances was the second kidney absolutely healthy. Thus in fifty per cent. of the cases the disease of the second kidney was affected by sclerosis or suppuration, or hypertrophy or atrophy and cystic degeneration, or some combination of these processes. And, of course, we all know the frequency of amyloid degeneration of the kidneys whenever and wherever we have suppuration. Bearing these facts in mind, we shall not be surprised when our cases die from suppression of urine, even if they had been successfully operated on for stone in one kidney.

Symptoms. The classical symptoms of renal colic that have been so accurately and graphically described by the Masters, have been ruthlessly overthrown by the iconoclastic workers and thinkers. The sudden intense pain in the lumbar region, with the stone tearing the tissue in its passage down the ureter, pain radiating down to the bladder, inside of the thigh and at the head of the penis; the nausea, vomiting, cold perspiration, the straining and continued desire to urinate and the passage of only a few drops of bloody urine, the rolling and tossing of the poor patient in semi-unconsciousness and the agonized expression of imminent death. These may be the symptoms of the passing of the stone down the ureter and the same symptoms can be caused by any condition

which produces an increased tension of the capsule of the kidney, such as we find in acute inflammatory congestion, or venous distension from whatever cause. These attacks are often present in intermittent uronephrosis, renal tuberculosis, tumors and acute congestion with contracted capsule. But the pathological condition that most often is mistaken for the passing of the stone down the ureter is the stone in the kidney—one that is lodged in the pelvis, calices or in the parenchyma. Frequently stones that are fixed in the calices or parenchyma, where no suppurative changes have occurred, cause practically no symptoms other than the indefinite feeling that something is not quite normal, and usually there is pain in the affected kidney and often severely increases by jumping, running or riding over rough roads, or passing of urine that contains some blood, sometimes in large quantities and sometimes even though it has to be detected with a microscope. Another important symptom of renal calculus is anuria, and this may be partial or complete. Complete anuria can be caused by a stone stopping the excretion from the affected kidney and by reflex action, stop the secretion from the other kidney. This is always a serious symptom, but this reflex anuria occurs from obstruction of urine from other causes or after an injury to the kidneys. This anuria is frequently observed when only one ureter has been suddenly tied in the operation of complete hysterectomy, or when one kidney has been opened or removed for the removal of a stone and the other kidney was apparently normal. Israel says:

"Reflex anuria may be regarded as proved; but it is not at present possible to explain why it does not occur every time that the apparent causes are the same."

Inflammation of the kidney from the presence of a stone often produces the same painful, frequent and straining urination that you see in cystitis.

Diagnosis. In the diagnosis of nephrolithiasis, the doctor owes a debt of profound appreciation to the maker of the

latest X-ray machines, because he has made simple and certain a diagnosis that was fraught with the greatest difficulty and uncertainty. The classical symptoms of nephrolithiasis often fail us; the sensation in the lumbar region, pain radiating from the kidney down the ureter into the bladder and head of penis, the intermittent attacks of fearful pain with the passing of blood in the urine, the presence of pus in the urine with an excess of urates or phosphates are symptoms that point strongly to stone in the kidney, but are by no means positive, and may be caused—as I have previously said—to any condition that will cause an increased tension in the capsule of the kidney. Again, we can have a very large stone which causes little or no pain until infection begins. It is in this case that the early diagnosis is so important, and it is here that we should make our most profound obeisance to the makers of the latest X-ray machines, because we can make a positive and accurate diagnosis before any damage has been done to the kidney by supervening infection, suppuration and destruction of tissue, and when nephrotomy is a very simple operation compared with the very serious operation which would later be done when infection has occurred. The passing of waxed-tipped sounds, as used by Dr. Kelly, into the ureter from the bladder was a very ingenious though difficult method of detecting stone in the ureter or kidney, but it is not accurate unless the stone is in the ureter or pelvis of the kidney; a stone in the parenchyma could not be felt and one in the calices most probably would not be felt.

Every patient who has an indefinite to a very definite pain in the lumbar region, whose kidney is painful on palpation, who has or has not attacks of severe pain referable to the kidney, who does or does not pass microscopical or larger quantities of blood in the urine, should have a radiograph taken for stone in the kidney. Formerly an X-ray picture was very uncertain and very difficult to take accurately and only the hard oxalate stones were brought

out clearly, the uric acid and soft phosphatic stones were not shown, or, if they were, it was only under the most favorable conditions and then very indefinitely shown. Today with the improved machine a radiograph can be taken in a few seconds, through four, six to ten inches of tissue, and show, too, the complete outline of the kidney. We have a means of diagnosis where a negative report is almost as accurate as a negative Wasserman or a negative Von Pirquet. I strongly urge an early diagnosis in these cases, because, although an aseptic renal calculus may give rise to only slight symptoms and be apparently harmless, it may at any time become extremely dangerous by causing a severe renal hemorrhage or a reflex anuria, or, when it becomes an infected calculus we have all the dangers that follow in the trail of pyonephrosis.

When calculi have actually formed in the kidney there is no medicinal treatment of any value, but there are many remedies of undoubted value that should be used in preventing the deposition of urinary sediments and facilitating their passage in the urinary stream. Where urine is concentrated and highly acid, the uric acid and urates are easily and quickly deposited, and this is one of the conditions when we have so often the passage of gravel and sand and the attacks of renal colic caused by its passing down the ureters. In this condition water should be given freely, preferably alkaline waters, to dilute the urine and to increase its current in the urinary stream, and thereby enable the urine to hold in solution the uric acid and urates and wash away any sand that may have accumulated in the kidneys or ureters. Urotropin is highly recommended by some authors, both for this condition and for phosphaturia. With an alkaline urine with heavy deposits of phosphates we have the same favorable condition for renal colic and the same ultimate formation of a renal calculus as you have with a highly acid urine with deposition of uric acid and urates. In this condition the urine should be diluted, too, by drinking large quanti-

ties of plain water—not alkaline, and making the urine acid. Personally I have never found but one drug that could make an alkali urine acid, and that is Lithium Benzoate in fifteen-grain doses, three to five times a day. I saw in consultation the other day a case of highly alkaline urine with heavy precipitate of phosphates where the patient had intense pain on urination, that he had for six months and could get no relief, that was completely relieved in three days—no pain, urine cleared and acid in reaction—under fifteen grains of Lithium Benzoate four times a day and drinking water freely. I have used urotropin and all the mineral acids, but without any effect on the reaction of the urine. Von Bergman quotes Herrman as recommending the following:

“That a patient take from 50 to 100 grammes pure glycerin at one dose. Some of it will appear unchanged in the urine. It has only a slight action upon the urinary calculi, and its good effect is partly due to the great quantities of water which the patient drinks, and partly to the fact that in mixing with the urine it makes the passages slippery and thus facilitates the washing out of small calculi. Be that as it may, two or three hours after the glycerin is taken pains will be felt in the region of the affected kidney, and a little later a considerable quantity of sand and small calculi will be passed.”

Personally, I have never used this, but I believe the treatment rational and worthy of trial.

I now come to the most interesting part of the subject and the most important—the surgical treatment of renal calculi. When we remember that Hippocrates advocated the incision of a perinephritic abscess with extraction of the calculi, and that very little improvement was made in his teachings up to 1890 we may understand how badly this subject was neglected.

In considering operation for renal calculi we should always consider the following questions as formulated by Israel:

1. Under what circumstances is it necessary to operate in order to save life?

2. Under what circumstances should operations be performed even though there is no immediate danger to life as a whole or the life of the kidney?

3. When should a surgeon refrain from operation?

An absolute demand to operate is calculus anuria after forty-eight hours; patients can live six to ten days from anuria, but after forty-eight hours the renal epithelium is so injured that it will probably never be normal again. The X-ray will indicate where the stone is located, and in this way give the operator of today a very marked advantage over the operator who had to guess which kidney was affected. Another positive demand for immediate operation is where the calculus has become the causative factor in an acute infectious suppurative process—here death is certain without operation—and this is true even in those cases where there is not much pain and the general condition is good, for there is no reason to hope that the kidney will ever become aseptic again. Where the stone is not causing much trouble and only an occasional attack of renal colic, the urine is aseptic, the Rodiograph shows the stone, still an operator under these conditions has a mortality of only about 3 per cent as against a mortality of 25 per cent if we wait until the kidney has become infected. Usually after four to six days of complete anuria it is useless to operate, but we should always give these patients the advantage of the chance, however remote. Lejors reports one case that was cured by removing stone after 12 days of complete anuria.

Von Bergmann says: "If from time to time small calculi are passed naturally and between the periods of renal colic, thereby caused, the patient feels perfectly well, it is safe to assume that no large calculus remains permanently in the kidney, although a disposition to the formation of calculi exists. Under such circumstances an operation is obviously useless and relief

is to be looked for from dietetic treatment."

The most essential question is to decide if it is a renal calculus or the passing of small stones down the ureters that cause the renal colic, or if the renal colic is caused from a renal congestion, renal tuberculosis, or a kink in the ureter. The classical symptoms of stone in the kidney or ureter are not to be relied on at all. The X-ray picture makes a diagnosis easy. The treatment for renal calculus without infection or suppuration is nephrotomy, just as soon as the diagnosis is made, nephrotomy under these conditions is a simple operation which is easily and quickly done, where there has been no infection or suppuration, delivering the kidneys through the lumbar incision requires but a few minutes, and when the kidney is delivered hemorrhage is controlled by placing a rubber band around the pedicle, or, better, compressing the pedicle with your fingers. An incision along the convex border one and one-half inches long is usually sufficient, but a much longer incision can be made with safety if necessary. Most authorities contend that the incision should be made along Byron Robinson's exsanguinated zone, but personally I have never found any exsanguinated zone when opening the kidney. After the incision has gone through the cortex you have less hemorrhage if the opening through the perenchyma is made by shoving the dissecting scissors into one of the calices and withdrawing with the blades open. After removing the stone always explore the ureter if the patient's condition justifies this. When there is a calculus in the ureter it is usually at the upper end, and it can often be pushed back into the pelvis by the finger. I have found that the long whalebone Bougie a boule makes a most excellent ureteral sound. If the kidney has been infected, the kidney can be closed and a drain left in the incision down to the kidney, or even in aseptic cases a drain left in the kidney for a few days is advised by many surgeons, I prefer a single rub-

ber drain with gauze packed around it to control the oozing. This gauze can be gradually withdrawn while the tube is still in place. Where there is infection drainage from the pelvis of the kidney is imperative and the drain should stay in the kidney until this kidney begins to functionate well, then the tube should be gradually withdrawn from the kidney. In case where the kidney has been partially or totally destroyed by the infectious process, where you have large abscess patches in the kidney and all the surrounding tissues have been infected by the infection from the kidney, even a simple nephrotomy becomes a very difficult and very serious operation in comparison to the simple nephrotomy for aseptic calculi. In these cases it is usually impossible to deliver the kidney without serious injury and we have to expose the cortex, pack gauze tightly around the pedicle to control hemorrhage. In these cases when the stone is removed the kidney quickly regains its normal condition, provided he recovers from the shock of the operation and the danger of reflex anuria—in the great majority of cases this is all the surgical treatment necessary. However, when the kidney is filled with abscess pockets, the parenchyma destroyed, each operator will have to decide from the visual inspection and the general condition of the patient whether he will do a nephrotomy or an immediate nephrectomy, or a primary nephrotomy and a secondary nephrectomy. But one who has dressed from day to day, week to week and month to month one of these cases of suppurating kidney will be inclined to do a primary nephrectomy and save the patient the agony of that prolonged suppuration.

If I have brought out clearly in this paper the great importance of an early diagnosis and early operation for renal calculi and have made clear the difference between the short simple nephrotomy of an aseptic calculus with its 2 per cent or less mortality and the difficult and dangerous nephrotomy and possible nephrectomy of an infected renal calculus, I will feel well

paid for the work I have done on this paper.

REMARKABLE CASE OF KATATONIA

BY J. W. STEVENS, M.D., NASHVILLE, TENN.

In hospitals for the insane, cases in their general aspect similar to the one to be reported below, are not particularly uncommon, but to one not so experienced there are several features that would occasion interest and remark, and the wonderful physical endurance manifested will, I think, be considered phenomenal even by the asylum attache.

The case in question being one of the katatonic type of dementia praecox, a few preliminary words regarding that psychosis, with special reference to that sub-class under which our patient falls, will be in order. In this, however, it is beyond the scope of this paper to do other than deal very briefly and primarily with this awful mental scourge.

Dementia praecox, a disease of adolescence or early adult life, is the most frequent psychosis met, providing as it does upward of 20 per cent of the admissions to institutions for the insane. Under this term have been embraced what at first glance appears a great variety of conditions, but a study of this medley reveals the presence of certain symptoms common to all, and the final development of a characteristic state of mental deterioration or dementia, seems to justify the nosology.

Three groups of cases have been recognized, viz: the hebephrenic, the paranoid and the katatonic. With the first two we have nothing to do here other than to say that the conditions as a whole is characterized by early active hallucinations, delusions of a more or less impossible and foolish content, a lack of that degree of emotional activity commensurate with the ideas expressed, and the occurrences of evidences of disturbance of the will. Finally, all types, after a variable period of months or years, eventuate in a characteristic state of mental deterioration, the

fundamental feature of which is a blunting of all the motional feelings.

The katatonic type is customarily initiated by a state of active hallucinations and delusions, there quickly becoming manifest that which is the characteristic and predominant feature, viz: peculiar disturbances of the will. Dependent upon this disorder of volition, but enhanced by the behest of delusions and hallucinations, variations of behavior occur all the way from simple constraint of posture and manner to states of catalepsy, in which the patient remains mute, assumes strained peculiar attitudes, presents that peculiar condition known as *cerea flexibilitas*, which consists in the maintenance indefinitely of any position of the limbs or body in which they are passively placed. Negativism, which is the resistance of every effort at passive motion or the antithetic reaction to stimuli, states of muscular rigidity, etc., may be shown. In these states of catalepsy the patients are almost oblivious to external impressions or painful stimuli, so that they may be violently pricked with a pin without showing resistance or evidences of feeling. These patients may for long periods refuse to speak or to take food, and may for months lie in a condition simulating stupor. Others assume peculiar postures, keep their eyes tightly closed, keep the hands so tightly clenched that the nails enter the flesh, utter monotonous cries, grunts, or repeat over and over certain sentences in the same way and in the same monotonous voice, day in and day out. Others, again, perform stereotyped movements or actions, such as constantly walking around a chair, rubbing the chin in the same way, etc. The most stubborn obstinateness (negativism) may be shown in doing things in the opposite way from which they should, such as the insistence upon sleeping under rather than upon the bed, of sitting on the floor instead of upon the chairs, etc. Filthiness of habits is common, and impulsive violence not infrequent. The cataleptic states, mutism and rigidity are exceedingly variable in their

duration, ranging anywhere from a few minutes to years. The transitions from these conditions to noisy, restless boisterousness, or comparatively normal behavior may come suddenly in an hour, at the expiration of a time set by a dominating delusion, or at the behest of an hallucination. The patients not infrequently then inform us that they have been fully conscious throughout of all that transpires about them. A few cases recover, remissions are not infrequent, but in the vast majority the course is downward to a dementia that makes the individual a permanent care upon his family or an inmate of an institution. Usually the severity of the symptoms of the volitional disturbances ameliorate with time.

In the following history there are four things that will perhaps seem somewhat remarkable to the man not in psychiatric work, viz: the long continued refusal of food necessitating tube-feeding, the mutism, the muscular rigidity, and the great amount of exertion performed.

S. C. H., age 23, male, white, Jew, an artist by profession, was admitted to the City View Sanitarium, June 23, 1910. He had shown some erratic behavior for several months, culminating a few days before I saw him in a frank psychosis. He lay in bed with eyes tightly closed and was so utterly irresponsive to every effort to arouse him, to induce him to speak, to move or to open his eyes, that his family were much alarmed and feared that he was suffering from some severe brain lesion that would quickly prove fatal. The brother related that for several days previous to my seeing him he had expressed delusions to the effect that he was the Christ, and that he would live always. For a few days subsequent to admission he would take food and would talk a little. Soon, however, he ceased to do either, and during the past eleven months he has not spoken a word save on three or four occasions, and has less than half a dozen times taken any food spontaneously. At the few times when he has been induced to speak he has indicated that he fully understands all that is said to him.

His refusal of food naturally resulted in our resorting to tube-feeding, which has been done regularly twice daily for the past eleven months, there being introduced into the stomach morning and night five or six eggs and a quart of milk at each feeding, an ordinary stomach tube being used. For the past few months we have used buttermilk in these feedings rather than sweet milk, with happier results. It is the time-honored custom to use in such feedings raw eggs and sweet milk, but upon this regime we found this patient to suffer from occasional attacks of diarrhoea and that he had always a foul, foetid breath, conditions that entirely disappeared upon the substitution of the buttermilk for the sweet. A like experience in several other cases has led me to adopt buttermilk as a routine. Under this artificial feeding his strength and nutrition have been well maintained. However, after he began the prodigious exertion to be presently described it became necessary to increase the quantity of food given.

For a short time after admission he abandoned his first state of inertia, and would walk about the house and grounds. This, however, soon gave place to inactivity, so that he would sit motionless for hours. The cataleptic state now presented, with classical *cerea flexibilities*. With eyes tightly closed and lips so closely compressed that they extended forward like a snout, he remained mute and totally inactive, and would maintain indefinitely any posture in which his body or limbs might be placed, regardless of how awkward, uncomfortable or cramped this might be. I frequently saw him placed in strained attitudes that I should dislike very much to be forced to maintain for five minutes, but which he would hold for half an hour, showing at the end of that time no tendency to relax it.

About a month after admission this gave place to that condition which has continued to the present, viz: a rigid tenseness of every muscle in the body under his voluntary control. The degree of this rigidity, purely psychic in origin, neces-

sitated the exercise of an amount of force to overcome it to permit the flexure of his forearm or leg, to be attended by danger of fracture. With limbs and body stiffly extended, he would not flex a joint, and to move him about was like handling a log. To stand him up was like ending up a log, and to stand him upon his head was rather easier than to stand him upon his feet. This was continued unmitigated for seven months, but recently he has become slightly relaxed.

To the psychiatrist let me say here that I fully realize that up to this point I have not described anything particularly extraordinary in special work, but that which I have further to relate will, I feel sure, seem remarkable even to the initiated.

About January 1, 1911, it began to be noticed that the patient rolled in bed occasionally, turning from side to side, never turning over on his face, but rolling squarely upon his side each time as far as possible without precipitating himself forward. This, from an occasional thing, quickly increased in frequency of occurrence, until by the middle of the month it reached the point where he rhythmically turned back and forth twelve or fifteen times a minute, and for many hours each day. From this point the frequency, or rapidity, of the turns increased, as did the number of hours in which he daily engaged in it, until the fastigium, if we may use the term, was reached on February 9, when, by careful estimate, during sixteen and one-half hours he rolled from one side to the other the almost incredible number of forty-eight thousand five hundred and twenty-six times. These figures and estimates are vouched for by several affidavits and are as nearly accurate as a sincere and careful effort could make them. For six consecutive hours a nurse sat beside his bed, keeping careful count and record, during which time of the six hours he turned seventeen thousand six hundred and forty-eight times, or an average of forty-nine times a minute. Repeated comparisons during the remainder of the sixteen and one-half hours indicated the rate of turn-

ing to be the same, so that I am sure that the estimate for the total time cannot vary more than 5 per cent from exact accuracy. Not unremarkable was the fact that the rythm of the turning scarcely varied at all.

If you would appreciate just what a feat was performed, let me suggest that upon going to bed tonight, you try for five minutes what he did for over sixteen hours that day. If it were possible, it would be interesting to compute how much work that expenditure of energy represents as expressed in terms of other examples of work. Once I did undertake to estimate, viz: how far he would have rolled had the segments of a circle through which he carried his body been consecutive and in the same direction. In turning from one side to the other he caused his body to pass through half the arc of a circle. Not to overestimate, however, we will say that he moved through but one-third of the arc. The whole circumference of the circle, as shown by rolling him completely over on the floor, is 3 feet and 3 inches. Taking one-third of this as representing the distance traveled in each turn from one side to the other, we have one foot and one inch. Turning forty-eight thousand five hundred and twenty-six times he would thus have traveled, or rolled, fifty-two thousand five hundred and sixty-nine feet, or, in round numbers, ten miles. Upon no other occasion than the date in question has he turned so rapidly or continuously, but a careful estimate for the ten days preceding and following this time indicates that it was his daily custom to turn not less than twenty thousand times.

During the latter part of February and through March and April his average was something like fifteen thousand turns, or approximately three miles of rolling daily. Since the 10th of May he has rolled much less. About this time we put him out on the porch for the sake of fresh air. Thinking that he is there unobserved, he will frequently remain still for an hour, relaxed and looking about naturally. The moment, however, he realizes he is being watched,

he instantly closes his eyes, stiffens himself, and resumes rolling. At the time of his greatest restlessness, when we realized that his exertions were exhausting him, we endeavored to restrain him. This we found to be impossible, for while we could tie him so that he could not move very much, yet he continued to try to do so, and expended more effort than when left alone.

City View Sanitarium, May 23, 1911.

OPHTHALMIA NEONATORUM.

BY ELIZABETH C. KANE, M.D.

Memphis, Tenn.

It is strange that an affection so prevalent, so direful in its results, yet so easily prevented should fail to even interest the average practitioner. We have known for thirty years of a prophylactic measure as certain as it is simple, for it was in 1881 that Crede advanced the use of one drop of a 2% solution of silver nitrate into the eyes of every new born infant. That we do not take advantage of this teaching, or are careless in following it in all cases is evident from the fact that we see and hear not infrequently of children so-called born blind, and who have an inflammation of the eyes in the first few days of life. That any trained physician could be careless in such a matter can only be explained by their lack of experience in this particular line. As this trouble commonly appears within the first few days of life, it seems that the responsibility rests most heavily upon the obstetrician, who has the intelligence to appreciate the danger while the average mid-wife has not. I am informed by Dr. E. C. Ellett, of Memphis, who has taken a great interest in the sight saving campaign, that the cases he has had in his practice came from physicians, never one from a mid-wife, and some correspondence which he turned over to me from other Southern specialists shows the same state of affairs. In England and some American cities, as New York, the birth registration slips ask the question, "What prophylactic did you use for the prevention of ophthalmia neonatorum? If none, state the reason

thereof." In the past few months a law well tried out in New York, Massachusetts, Ohio and Maryland has been passed in Tennessee, one that will save the sight of many babies if we of the profession show sufficient interest and insist upon its enforcement. Having just seen the Sage exhibit for the Prevention of Blindness, a Senator turned and asked me if there were any physicians who did not use a silver solution in the babies' eyes, a very embarrassing question to me. This law cannot make the careless physician wake up, it only forces the layman, mid-wife, etc., to report such an infection within two weeks of the birth of such a child to some reputable physician or the Board of Health. When the mid-wife present at the birth realizes that for her neglect in reporting a case of ophthalmia neonatorum there is a statute which provides for a fine, it seems likely that the cases from this source will become fewer, surely the neglected cases where blindness ensue will become materially reduced. Taking the records for ten years of one school, the Pennsylvania State School for the Blind, at Overbrook, Pa., we find the percentage of pupils admitted each year who have lost their sight from ophthalmia neonatorum to be an average of 33.69%. In 1905 as high as 50%. One-third of the children in the New York State School are similar victims. In the United States there are between 6,000 and 7,000 persons blind from this one cause, and this in an age of which the watch word is Prevention.

As a result of interviewing 95 physicians, selected because of a wide obstetrical practice, in five cities it has been found that in their combined practice, involving 5,949 births, which was 48% of the total births in those cities, 17% of the children were protected by the routine use of a prophylactic. In the report of the Social Service Department of the Massachusetts Eye and Ear Infirmary the details concerning 116 cases of ophthalmia neonatorum are given. October, 1908, to October, 1909, at home, 106; in hospital, 10. Attended by private physician, 95; by dispensary physician, 16; by city physician,

3; by mid-wife, 2. Results, vision on discharge normal, 87; one eye disabled, 6; one eye blind, 16; blind, 6, and one probably totally blind. This shows the good results in prompt treatment, without which undoubtedly all 116 cases would have been lost. This investigation emphasizes the responsibility of the physician rather than the mid-wife. The slogan for Massachusetts is, "No babies needlessly blind for life in 1915." May we not adopt the same here in Tennessee? The general practitioner has yet much to learn of this disease, and the parents know nothing of it. Yet upon these two groups the baby depends for the gift of sight. This is not only an injustice to the children but a wrong to the public, which is obliged to bear the cost of maintaining so many individuals who can be only in a small measure self-supporting.

It is recognized that the main problem is not what to do, but how to accomplish what the profession know to be an effective method of prevention. Those who object to the slight irritation of the eyes that sometimes follows the use of a 2% solution of silver nitrate will find a 25% solution of argyrol without this objection and efficient as a prophylactic. As to treatment when the trouble has been allowed to creep in, I only wish to recommend the instillation of a silver solution at once, so that no time may be lost while a specialist is being called, and that the obstetrician join with the specialist to urge hospital treatment if possible, failing in this to impress upon the parents that it requires constant, watchful attention to save the eyes.

At present most people in shop or in office, in short, usual occupations, survive or fail according as they are able to make good use of their eyes at a distance of eighteen inches. The loss of sight is so great as to be incalculable. Yet what cannot be replaced may easily be injured or destroyed through neglect, through ignorance, through the lack of professional attention at the right moment, through accident, or through a bad heredity. Let our estimate of the value of eyesight be judged, as that of rational human beings, not by the realization of calamity when it is too late, but by the degree of our attention to the precautions which will prevent the calamity. Sympathy for the blind is universal, let it also be practical, let us use our utmost effort and influence to stamp out this needless horror.

THE JOURNAL

OF THE

TENNESSEE STATE MEDICAL ASSOCIATION

Devoted to the Interests of the Medical Profession of Tennessee

Office of Publication, Jackson Building, Nashville, Tenn.

JULY, 1911.

EDITORIALS**CONSERVATION.**

On every hand is heard the cry of conservation. Our forests, mines, waterways, lands and hosts of other natural resources are being carefully watched, and organized effort is being made to protect and conserve them. The most important of all, Public Health, has until recently been neglected. There seems to be an awakening, a new era has developed, and one which anticipates the state control of the health of its citizens, so as to conserve the individual as a valuable unit in the system of society. It shall seek to educate the people as to the better method of living, the elimination of epidemics and contagious diseases and the protection of the child and the adult from the evils of bad food and bad habits, physically and morally.

With the exception of the Rockefeller Institute, there is no systematic effort at present operating for the study or prevention of the diseases to which we are continually exposed. Especially in our beloved Southland there has been grafted a large group of tropical diseases, menacing the life of our people. Hookworm and pellagra, not to mention the various types of malaria and dysenteries, have already exacted a frightful toll in mortality from our ignorance of existing conditions, and we heartily applaud and commend the effort which is now being made by the Medical Department of Tulane University of Louisiana, to establish a School of Tropical Medicine and Hygiene in New Orleans. Such a school is unquestionably a necessity in the United States and we know of no city more suitable or better situated than New Orleans.

PRESIDENT TAFT'S MESSAGE.

In a recent message to Congress President Taft scathingly arraigned the manufacturers of what he denounced as "dangerous drug frauds" and urged Congress to amend the pure food and drugs law that the weak points recently pointed out by decisions of the United States Supreme Court might be strengthened.

His message is so full of good sense that we quote it elsewhere and trust it will receive the consideration which it demands.

At this point it might not be out of place to call attention to the laxity of our profession in prescribing similar frauds classed as proprietary medicines, and, to the farcical attitude of state delegates to the American Medical Association aiding them in their commendable fight against nostrums and fraudulent proprietary medicines while the journals representing their state societies teem with advertising from these houses. The Journal of the Tennessee State Medical Association will not be found guilty and will not place our delegates in such an embarrassing attitude.

SIR WILLIAM OSLER, BARONET.

Our distinguished confrere and fellow-countryman, Dr. William Osler, Regius Professor of Medicine, Oxford University, has received kingly honors at the hands of His Majesty King George V in the form of a baronetcy. No man of science more richly deserves such a title. Dr. Osler has always stood for everything that is highest in our profession and has been an inspiration to higher ideals in medicine throughout the world. We congratulate Sir William Osler upon the greatness he has achieved and wish him many years to enjoy his title.

The work for the eradication of hookworm disease that is being done by our State Board of Health is showing up in its true light the importance of treatment for infection with intestinal parasites of all sorts. The records at the office of the State Board of Health are full of reports of cases of intestinal parasitism diagnosed

as "indigestion," "anemia," "catarrh of the stomach and bowels," "torpid liver," "malaria," "tuberculosis," and other things. The true nature of the trouble in most of these cases was discovered by the microscopical examination of fecal specimens of hookworm disease. Several cases of "tuberculosis" have been restored to health by treatment for round worms. In one family, two children were found to have four different varieties of intestinal parasites—hook worms, round worms, whip worms and pin worms. The round worms were first attacked, and the first treatment resulted in the expulsion of 190 from the two cases. One little girl was found to have a very heavy infection of round worms. Her mother insisted that she be examined for hookworm disease after she had been told that the child was incurably infected with tuberculosis. All evidence of tuberculosis disappeared when the intestinal parasites were expelled, and the child is well and happy today. Even "epilepsy" and "organic brain disease" have been cured by treating a few intestinal parasites. Why not make it a routine practice to have a microscopic examination made to discover whether or not intestinal parasites play a part in the dark cases?

The average physician does not appreciate the very great importance of the registration of every birth at which he officiates. Rights of citizenship, property rights, and even legitimacy of birth may finally have to be established by birth certificate. Let every physician practicing in a registration city or county report promptly every birth occurring in his practice. The health officers are trying hard to get accurate records. If every physician would keep his own record of births and deaths he would be in a position to render valuable service many times at the expense of very little trouble.

County health officers often report to the State Board of Health that it is "impossible to get the doctors of the counties to report." Why should these officers not

have the support and cooperation of the profession? Blanks are sent to all the physicians and it would not take much time for them to be filled out with reports of cases of communicable diseases. The public health service cannot succeed unless the full cooperation of the doctors is offered.

Some cases of typhoid fever occur because the people think that this disease is not contagious. The idea that typhoid fever is not "caught," but that it is eaten or drunk is deeply rooted in the minds of the people and in the minds of some doctors. The people should be told that typhoid may be contracted by direct contact as well as from contaminated articles of food.

Are you considering the possibility of pellagra in those cases of "sunburn?" And in those cases of intractable diarrhoea with marked nervous symptoms? Reports made to the various health officers indicate that pellagra is quite prevalent in many Tennessee counties.

NEWS NOTES AND COMMENT

The Nashville Health Department is setting the pace. A trained nurse has been employed to look after infantile diseases and do other work that can be done by a nurse under the direction of a public health department. The milk supply of the city is being looked after carefully and the Tuberculosis Hospital, operated by the city and county conjointly, is open for business. Food offered for sale must be protected from flies and dirt, and the department is seeing to it that the dealers are complying with the law in this respect.

The Pure Food and Drugs Department of the State Board of Health is doing most valuable work. This department is entitled to the most active support from the doctors. Dr. Brown has recently successfully prosecuted violators of the Pure Food and Drugs Act in Memphis.

A very serious accident occurred on June 16, at Trenton, Tennessee, in which Dr. J. W. Allen, of Rutherford, was severely injured and his wife killed outright. Dr. Allen was out in his automobile with Mrs. Allen and their two little children, a little girl about five years old and an infant boy, when the machine became unmanageable and turned over. The children were unhurt and the little girl, realizing the condition, walked about a mile, carrying her baby brother to the nearest farm-house for assistance. Dr. Allen had only been running the machine for a few days and was inexperienced in its management.

Dr. W. Scott Farmer, of Cookeville, is in Boston, doing post-graduate work.

In the June issue, under report of deaths, Dr. Elbert Sevier Miller, of Johnson City, was erroneously stated to be of Knoxville.

The Tennessee Hospital, formerly owned and operated by the combined Medical Departments of the University of Nashville and Tennessee, has been permanently closed owing to the dissolution of these two departments.

Dr. S. S. Crockett, of Nashville, has returned from London, where he has been doing post-graduate work on nervous diseases at the Queens Square Hospital.

It is officially announced by President Brown Ayers that the former connection between the Medical Departments of the University of Nashville and Tennessee will be discontinued: The Medical Department of the University of Tennessee will be removed to Knoxville, where a two-year course will be given.

The trustees of the University of Nashville Medical Department have donated their interest in the equipment formerly owned by the combined school to the Medical Department of the University of Tennessee and will make no effort to continue for the present the Medical Department of the University of Nashville.

The Tennessee Hospital, which was formerly operated as a clinical hospital by the combined departments, has been closed, the equipment disposed of and the building sold.

The Upper Cumberland Medical Society met at Monterey May 23 and 24 with about fifty members present.

The meeting was well attended by the physicians of the Upper Cumberland district as well as a large number from Nashville.

The session was interesting and instructive to all. The open meeting, to which the laity was invited, attracted a packed house, who listened attentively to the papers and discussions.

The following officers were elected: President, Dr. J. T. Moore, of Algood; Secretary-Treasurer, Dr. L. D. Ensor, of Cookeville.

It is reported that there is a movement on foot which may result in the medical, dental and pharmaceutical departments of the University of Tennessee consolidating with the College of Physicians and Surgeons and locating in Memphis. A committee composed of Dr. E. C. Ellett, J. A. Gardner, Max Goltman, R. A. Greer and R. R. Ellis brought the matter to the attention of the Business Men's Club and a committee from this body was appointed to confer with the committee of medical men above mentioned looking towards the consolidation.

It is the intention of the trustees to make the school, should the consolidation take place, one of the largest and best in the South. Memphis is an ideal city for a big medical school. Its hospital accommodations and clinical facilities will compare favorably with many of the larger cities.

At a recent meeting of the Shelby County Board of Health a resolution was passed to furnish antitoxin for diphtheria, rabies and tetanus free to indigent patients.

The Memphis Board of Health has opened a free milk dispensary and with

the aid of four visiting nurses under the control of the Visiting Nurses' Association, are distributing free milk to the indigent, which is paid for by public subscription. The nurses will, after the summer season, devote their time to the care and prevention of tuberculosis.

Dr. O. N. Bryan and Dr S. H. Shieb, of Nashville, are doing post-graduate work at Harvard University, where they will remain until the latter part of August.

At the recent meeting of the A. M. A. at Los Angeles, Cal., the following officers were elected: President, Dr. Abraham Jacobi, New York; First Vice-President, Dr. William Jarvis Barlow, Los Angeles, Cal.; Second Vice-President, Dr. F. W. McRae, Atlanta, Ga.; Third Vice-President, Dr. W. R. Tipton, Los Vegas, New Mex.; Fourth Vice-President, Dr. A. L. Wright, Carroll, Iowa; Secretary, Dr. Alexander R. Craig, Chicago, Ill.; Treasurer, Dr. Wm. Allen Pusey, Chicago, Ill.; Trustees, Dr. Philip Marble, Atlantic City, New Jersey; Dr. Phillip Mills Jones, San Francisco, Cal.; Dr. W. T. Sarles, Sparta, Wis. Dr. Jno. A. Witherspoon, of Nashville, was re-elected a member of the Council on Medical Education and Dr. A. B. Cooke, of Nashville, was made a member of the Judicial Council.

DEATHS

Dr. R. N. Knox, age sixty-six, died very suddenly at Winchester, Tennessee, June 23rd. Dr. Knox formerly practiced at Murfreesboro for more than thirty years, having moved to Winchester about six years ago. He is survived by his wife, two sons and one daughter.

Dr. Daniel German, of Franklin, Tennessee, died in Nashville, June 21. He was in his eighty-first year. Dr. German was a prominent physician and was well-known throughout the state. He is survived by his wife and four children, Dr. Dan German, Jr., Dr. Richard German, Horace German and Mrs. Samuel Webb.

SOCIETY PROCEEDINGS

HAMILTON COUNTY.

Weekly meeting of the Chattanooga Academy of Medicine and Hamilton County Medical Society held June 30, 1911, at 8 p. m.

President Jas. H. Atlee presided. Roll of members called, 48 being present. Minutes of the last regular meeting were read and approved. The Board of Censors reported favorably on the application for membership from Dr. Miles D. Davis and he was elected to membership in the society. Application for membership was read from Dr. Leopold Shumacker and referred to the Board of Censors. Cases were reported by Drs. C. A. Cobleigh, J. J. Gee, Y. L. Abernathy and V. Gibbs. Dr. Wesley E. Taylor, of Atlanta, Ga., read a most interesting and instructive essay entitled "Headaches." Dr. Taylor is a specialist on diseases of the nervous system and the every-day subject he selected for his essay appealed to all the members. He presented the subject in a clear and concise manner, his classification being entirely original and the treatment of the conditions was based on the most recent advances in therapy. The discussion was opened by Dr. J. W. Macquillan. Discussion continued by Drs. B. F. Travis, A. D. Cleary, N. C. Steele, C. C. Ellis, Y. L. Abernathy, F. T. Smith, L. T. Stem, B. S. Wert, W. G. Bogart, Gus Shipley, of Athens, and E. T. Newell. Closed by Dr. Taylor. The society then adjourned to the residence of Dr. Jas. H. Atlee on Oak Street, where a reception was tendered Dr. Taylor. Refreshments were served and a most pleasant evening spent.

The society adjourned.

H. P. LARIMORE, *Secretary.*

Weekly meeting of the Chattanooga Academy of Medicine and Hamilton County Medical Society held July 7, 1911, at 8 p. m.

President Jas. H. Atlee presided. Roll of members called, 29 being present. Minutes of last regular meeting were read and approved. The Board of Censors reported

favorably upon the application for membership from Dr. Leopold Shumacker and he was elected to membership in the society. Cases were reported and discussed by Drs. Raymond Wallace, F. T. Smith, C. A. Cobleigh, T. E. Abernathy, J. H. Atlee, L. T. Stem, E. E. Reisman, L. C. Williamson and S. I. Yarnell. Dr. J. S. B. Woolford read a most interesting and original essay entitled "Hemorrhoids." Both the medical and surgical aspects were gone into at great length and elicited splendid discussion. Discussion opened by Dr. E. E. Reisman, continued by Drs. Raymond Wallace, F. T. Smith, J. B. Steele, E. B. Wise, C. A. Cobleigh, Y. L. Abernathy and J. B. Haskins. Closed by Dr. Woolford.

The society adjourned.

H. P. LARIMORE, *Secretary*.

McMINN COUNTY.

At the regular monthly meeting of the McMinn County Medical Society, held at Athens, Tennessee, on the first Monday of the month, Dr. William J. Abel, of Decatur, Meigs County, was elected to membership. Dr. J. R. Nankivell, Major of the National Guard and President of our local society, who has just returned from the maneuver grounds in Texas, gave us a very interesting paper on "Typhoid Antitoxin."

W. S. MOORE, *Secretary*.

ABSTRACTS

THE OPERATIVE AND SPECIFIC TREATMENT OF RENAL AND VESICAL TUBERCULOSIS.

PROF. DR. HERMAN KUMMELL, HAMBURG, EPPENDORF, GERMANY. SURGERY, GYNECOLOGY AND OBSTETRICS. APRIL, 1911.

Prof. Kummell refers in this article to the difficulties attending the early diagnosis of renal tuberculosis, owing to the varied pathology which may exist in the kidney from beginning tuberculosis of the papillae to large caseous foci throughout the kidney, together with the fact that the symptomatology is usually referred to the bladder and the primary seat of the disease is overlooked or not sought for.

He says primary tuberculosis of the kidney does exist and that the infection travels down via the ureter to the bladder.

If tuberculosis of the genital organs and of the bladder are present at the same time, it is to be assumed that a lesion of the kidney also exists. He has had several opportunities to confirm the statement that if two tuberculous infections were present each had its origin in a different primary focus.

In tuberculous peritonitis springing from infected tubes in the female he has never seen a single case with bladder involvement without an accompanying lesion in the kidney. He does not agree with Tuffier in that bilateral tuberculosis is an ascending infection from one tuberculous kidney, through ureter, bladder and ascending to the opposite ureter and kidney, but claims that both kidneys were simultaneously infected, though one may have overshadowed the other. "As in other diseases, and especially so in tuberculosis of the kidneys, an early diagnosis is of the greatest importance for the carrying out of a successful treatment."

He regards the earliest stage of tuberculosis of the urinary organs as that in which the subjective symptoms do not refer to the seat of the trouble and objective signs, as enlargement and tenderness are absent; early removal of an infected kidney at this time is followed by a short convalescence and complete recovery. If a tuberculous cystitis is present, recovery follows the removal of the diseased kidney, provided the function of the second remains unimpaired.

He speaks of the futility of treating tuberculous cystitis by irrigations, curetting, excision and cauterization, and says tuberculosis of the bladder, which is a secondary infection, should be treated surgically, but that early operation should be done on the infected kidney.

Those cases presenting a high degree of contracted bladder often give excellent results after nephrectomy. The most favorable results are, of course, to be obtained by early diagnosis and early removal.

He says, "every case of cystitis, in

women especially, which can not be attributed to gonorrhoeal infection, or to infection introduced by a catheter, should be suspected as tuberculous and calls for repeated and thorough examination." Every case of chronic gonorrhoeal cystitis should be searched carefully for tubercle bacilli, "as gonorrhoea is a factor of etiological importance in the consideration of later infections." Cloudiness of the urine may be the only symptom accompanying extensive destruction of the kidney and catheterization of the ureter be required to determine the source of the infection. He speaks of the frequency of errors made in referring slight bladder disturbances to gynecologic conditions as retroflexion, cystocele or to affections of the adnexa, and says he has operated upon many women with advanced renal and vesical tuberculosis who had previously undergone long courses of unnecessary treatment at the hands of gynecologists.

The demonstration of tubercle bacilli is always the surest and most important diagnostic point in determining tuberculosis of the urinary organs. By inoculation and microscopic examinations he has been able to demonstrate them in all cases. He has never seen infection follow the use of the ureteral catheter, and his observation covers many hundred cases.

Before doing a nephrectomy we must know with certainty whether the remaining kidney is healthy and able to carry on the work of both organs. This can only be done properly by the use of the ureteral catheter. In those few cases in which it is impossible to pass the catheter, he regards the freezing point of the blood as a sure and safe guide. If the freezing point of the blood is below 0.6, he does not forego operative interference, even though other things speak against operation, but he does a nephrotomy on the diseased kidney, removing the tuberculous and septic masses, and tampons the kidney and waits until the blood returns to the normal freezing point before doing nephrectomy upon the formerly nephrotomized kidney. If the freezing point should remain low after the first nephrotomy and the indications de-

manded, he could do a nephrotomy upon the remaining kidney.

Out of 125 cases of renal tuberculosis upon which he has operated, he did seven nephrotomies on account of double-sided disease, one having a double-sided nephrotomy; 118 nephrectomies for unilateral disease; 12 were operated upon before the newer methods of diagnosis were known—with three deaths. After the employment of ureteral catheterization and estimation of functional activity, 108 nephrectomies were done, with a mortality of four—pneumonia, sepsis, myocarditis and milary tuberculosis being the causes attributed—18 succumbed within the first six months; 18 of the remaining 84 died in the course of the next four years; in the course of the next 10 to 13 years none died; three have died, time elapsed unknown; from four no report could be had; the remaining patients all report being in good health; three of them have become pregnant and have been delivered; 25 are still under treatment. He thinks spontaneous healing of a tuberculous kidney possible, but observes that the tissue remaining is not often capable of functioning.

In summing up the value of medicinal and specific therapy, he does not approve of the waste of valuable time, because these methods are usually given at a time when a more certain method would prove of greatest benefit. In those cases refusing operation which were treated with tuberculin, he found no sign of healing, but, on the contrary, he says that a transient improvement most always follows the use of tuberculin, which is later followed by impairment.

THE USES AND LIMITATIONS OF VACCINE THERAPY IN THE MAN- AGEMENT OF ARTHRITIS.

CHARLES F. PAINTER, M. D. AMERICAN JOURNAL OF ORTHOPEDIC SURGERY. FEBRUARY, 1911.

An unusually valuable article of considerable length, reviewing the literature of vaccines from 1906 to the present time, quoting the various opinions held by a

number of investigators and reaching the following conclusions:

(a) The results of experimental studies, though contradictory in many respects, are perhaps no more so than should be expected in the earlier researches into so complicated a subject, and are certainly strikingly suggestive in many of their findings.

(b) As regards gonorrheal and tuberculous joint infections, there does not seem as yet to be any well established theoretical ground for a belief that vaccination after infection could play a curative roll.

Practically there is little evidence that it ever has.

(c) In chronic non-tuberculous infections no progress whatever has been made either as regards diagnosis or treatment, though there are many of these conditions which are clinically infectious. there is very little prospect that much help will be derived in the understanding of these conditions until some of the fundamental difficulties in the way of applying vaccination have been removed.

(d) The compliment-binding reaction has stood the test of practical experience very well indeed in the diagnosis of syphilitic bone and joint infections, and should be employed in doubtful cases of this description.

(e) There is abundant reason for thinking that the future treatment of these conditions will be much more facilitated by vaccine and serum therapy than they are now. There is very little reason for thinking that they are at present even adjuvants to our therapeutic measures, with the possible exception of Marmorek's serum in the treatment of tuberculous arthritis.

(f) Efforts should be directed to perfection of methods for putting into practice that for which there seems so much theoretical and experimental justification. Compilation of statistics, however favorable, are undesirable unless there is indisputable ground for a claim that the results reported have not been and could not be obtained under any other form of treatment.

A. G. NICHOL.

THE RESULTS OF AUTOGENEOUS VACCINES IN THE HOSPITAL FOR RUPTURED AND CRIPPLED.

V. P. GIBNEY, M. D., AND GEO. E. BENNETT, M. D. AMERICAN JOURNAL ORTHOPEDIC SURGERY. FEBRUARY, 1911.

The authors state that "Based upon the assumption that the greater part of the discharge is not due entirely to the primary lesion, but to secondary infection following the spontaneous rupture or otherwise evacuated abscess, and realizing that such secondary infections burrow into and penetrate the surrounding tissue, causing a condition almost, if not as bad, as the primary lesion, we have been led to use the autogenous vaccines as a part of the treatment in these cases.

Considering the almost absolute futility of surgical measures in the removal of these countless foci, it has been our aim to institute such measures as would increase the fighting powers of the tissues and eradicate the diseases process completely."

In preparing the vaccine no effort is made to isolate the predominant organism, but the mixed organisms in the discharge are taken and the vaccines are prepared therefrom. Very small doses are used at rather infrequent intervals, taking a longer time to establish a proper dose. No attempt is made to produce a violent reaction, preferring "to make haste slowly."

The author's cases which have been treated according to the above method have shown marked improvement and in many instances the sinuses have entirely healed.

A. G. NICHOL.

ABDOMINAL SUPPORT IN THE LATER MONTHS OF PREGNANCY.

The great value of abdominal support in the later months of pregnancy is more thoroughly appreciated today than ever before. The important thing, however, is to secure support that meets a patient's needs without causing discomfort or producing undue pressure over sensitive regions.

Backache and "dragging down" pains are often so severe that a patient, to obtain temporary relief, will not infrequently suf-

fer excessive constriction as the lesser of two evils. Fortunately this is unnecessary, and the use of the Storm Binder affords effective relief from backache, etc., without the slightest undue or unpleasant pressure. This is attributable to the fact that this Binder has been devised along scientific lines, with painstaking regard to avoiding harmful pressure as well as to securing adequate support. The benefits that come from wearing the Storm Binder are apparent, therefore, from the first, and no patient who has ever worn one will willingly forego the comfort and relief that can be so easily and pleasantly obtained.—*American Medicine*, April, 1911.

NEWSPAPER EDITORIALS ON MEDICAL SUBJECTS.

The growing interest of laymen in public health and medical questions is shown by the increasing amount of newspaper space devoted to the discussion of such subjects. We quote from a few recent editorial utterances:

Under the title of "Sectarian Legislation," the Milwaukee *Free Press* discusses, in a strong editorial, the relation of the state to the practice of medicine. Commenting on the protest made by "Christian Scientists" against the bill introduced in the Wisconsin legislature providing for the medical examination of school children, the *Free Press* says:

"The protest . . . foreshadows a difference of opinion certain to become acute whenever sects become numerous enough to have an influential voice in the framing of our laws. Those who would be the last to interfere with another's religious belief will find themselves constrained to protest against regulating society in general in accordance with the Christian Scientists' construction of the laws of hygiene. For suggestions of disease are conveyed not alone by medical examinations, but by every placard marking a house where some contagious disease is quarantined, by every antisputting notice, every drinking fountain, in short by every one of the precautions through which modern science seeks

to safeguard health and check the spread of disease.

"Experience shows that every parasite that infests the human body (and most skin diseases are parasitic) can be conveyed from one to another; that every juvenile disease, mumps, measles, chickenpox, scarlatina, is highly contagious; that the most deadly infections that poison the human system may be contracted by contact of one with another; and that nothing could be better calculated to communicate any of them than children's games, with the playing and romping natural to all normal children. One of the reasons why a health examination is proposed for all schools is that the healthy may not be infected by the diseased, and that obscure diseases or ailments which have escaped the child's guardians, else he would not be in school, may at once be looked to and relieved.

"The other reason why school children are to be subject to examination has to do with eugenics, the new science that concerns itself with the welfare of society. Observation proves that schooling is thrown away on a sickly, a hungry, or a suffering child. Only normal pupils, well nourished and in good health, are in condition to assimilate learning; on the others teaching is worse than thrown away. Neglected teeth, abnormal growths in nose and throat, imperfect vision and hearing have been found to have much to do with the backwardness of defective children, although most of these are easily remedied in the young, and when cured the mental deficiency frequently disappears.

"That is why the state is undertaking to make education effectual by attending to the physical condition of the children, and providing, in case of poverty, free medical, surgical or dental treatment with intent to make them, first of all, healthy little animals, to the end that bodily discomfort shall not incapacitate them for mental training. This is one of the most enlightened measures ever applied to the public school system, and it would be a thousand pities to let the theories of any sect interfere with it.

"At present Christian Scientists are living in safety because they are a fraction of a law-abiding community. But, supposing them in the majority, the enforcement of their views would mean that there would no longer be such a science of sanitation; we should speedily revert to the era of epidemics; small-pox, cholera, typhoid, which are now avoided in crowded cities only by stringent regulation; tuberculosis, with nothing doing to abate its ravages, would soon regain lost ground, and puerperal infection would again number its thousands of victims. Modern therapy is becoming more and more a question of the prevention and combating of infection; Christian Science denies the existence of infection; on this vital issue the two are flatly opposed. Now is as good a time as any to determine whether medical experts and men eminent in research are to be our guides in matters of health.—*From Journal A. M. A.*

It may be interesting in this connection to read the following report of Dr. Florence Harvey Richards, which was published in the April issue of the Pennsylvania Medical Journal.—(Editor.)

A thorough physical examination of the Freshman Class of our school has been made this year for the first time, and I venture to publish the results, believing that they will be of interest to both physician and teacher. The following statistics will speak for themselves:

Number of girls examined, 462; average age, 14½ years; parents, both American-born, 236; one foreign-born, 52; both foreign-born, 124; Afro-Americans, 25. Nationality of parents arranged according to numbers: American, Russian, German, Italian, English, Irish, Austrian, Hungarian, Norwegian, Swedish, Scotch, Roumanian, Welsh, Canadian.

Physical examination: Heart, valvular disease, 13. Lungs, good, 395; fair, 67; tubercular history in immediate family, 18; tubercular history in one generation removed, 53. Enlarged tonsils, 132. Adenoids, 37. Teeth, good, 302; good but not clean, 114; poor, 43; bad, 3. Eyes,

wearing glasses, 73; vision fair, 418; poor, 30; bad, 14. Ears, earache in childhood, 96; deafness, 27. Skin, acne on face, 97. Nervous condition, good, 262; fair, 119; poor, 81. General condition, good, 408; fair, 49; poor, 5. Menstruation, not yet established, 84; at 10 years, 1; 11 years, 11; 12 years, 60; 13 years, 154; 14 years, 109; 15 years, 30; 16 years, 4; 17 years, 1; pain, 45; irregularity, 119. Miscellaneous, chorea, 3; goiter, 7; typhoid fever within three years, 18; appendicitis, 4; rheumatism, 2; diabetes, 1; tubercular hip disease, 1; congenital dislocation hip, 1; cleft palate, 1; resected rib, 1; old fracture, 1; dislocation of clavicle, 1; ptosis of eyelid, 1; tubercular glands of neck, 2.

Orthopedic Examination: right dorsal scoliosis, 31; left, 10; lumbar lordosis, 2; right-dorsal rotation, 5; head forward, 7; right hip prominent, 9; left, 7; round shoulders, 12; short leg (congenital dislocation of hip), 1; funnel chest, 1; wry neck, 2. Total deformities, 87. Cards sent home, notifying parents and guardians, 192.

Remarks: Close vision of the class is good; far sight, poor. The nervous condition of the school is not good, probably due to the large foreign element which shows itself in high spirits, bordering on loss of control, and hysteria in many cases. The large numbers showing earache in childhood is significant, demonstrating the prevalence of infectious diseases of childhood. The orthopedic deformities we shall try to correct in the gymnasium. A practical course in hygiene, touching on all the points in the examination and others as well, will be given to the entire class, as we believe that education along these lines is necessary for a happy and healthy citizenship

PRESIDENT TAFT'S MESSAGE.

"To the Senate and House of Representatives: Your attention is respectfully called to the necessity of passing at this session an amendment to the food and drugs act of June 30, 1906, which will supplement existing law and prevent the shipment in interstate and foreign commerce

and the manufacture and sale within the territories and the District of Columbia of worthless nostrums labeled with misstatements of fact as to their physiological action—misstatements false and misleading even in the knowledge of those who make them.

"On June 30, 1906, after an agitation of twenty years, the food and drugs act passed by the Fifty-ninth Congress received the approval of the President and became law. The purpose of the measure was two-fold—first, to prevent the adulteration of foods and drugs within the jurisdiction of the Federal Government, and, second, to prevent any false labeling of foods and drugs that will deceive the people into the belief that they are securing other than that for which they ask, and which they have the right to get.

"The law was received with general satisfaction and has been vigorously enforced. More than 2,000 cases have been prepared for criminal prosecution against the shippers of adulterated or misbranded foods and drugs and seizures have been made of more than 700 shipments of such articles. More than two-thirds of these cases have been begun since March 4, 1909. Of the criminal cases more than 800 have terminated favorably to the government, and of the shipments seized more than 450 have been condemned and either relabelled or destroyed. In every case in which the food seized was deleterious to health it was destroyed. A large number of cases are now pending.

"The Supreme Court has held in a recent decision (*United States vs. O. A. Johnson*, opinion, May 29, 1911), that the food and drugs act does not cover the knowingly false labeling of nostrums as to curative effect of physiological action, and that inquiry under this salutary statute does not by its terms extend in any case to the inefficacy of medicine to work the cures claimed for them on the labels. It follows that, without fear of punishment under the law, unscrupulous persons, knowing the medicines to have no curative or remedial value for the diseases for which they indicate them, may ship in interstate commerce

medicine composed of substances possessing any slight physiological action and labeled as cures for diseases which in the present state of science are recognized as incurable.

"An evil which menaces the general health of the people strikes at the life of the nation. In my opinion the sale of dangerously adulterated drugs, of the sale of drugs under knowingly false claims as to their effects in disease, constitutes such an evil and warrants me in calling the matter to the attention of the Congress.

"Fraudulent misrepresentations of the curative value of nostrums not only operate to delude purchasers, but are a distinct menace to the public health. There are none so credulous as sufferers from disease. The need is urgent for legislation which will prevent the raising of false hopes of speedy cures of serious ailments by misstatements of fact as to worthless mixtures on which the sick rely while their diseases progress unchecked.

"At the time the food and drugs act was passed there were current in commerce literally thousands of dangerous frauds labeled as cures for every case of epilepsy, sure cures for epilepsy, sure cures for consumption and all lung diseases, cures for all kidney, liver and malarial troubles, cures for diabetes, cures for tumors and cancers, cures for all forms of heart disease; in fact, cures for all the ills known at the present day.

"The labels of many of these so-called cures indicated their use for diseases of children. They were not only utterly useless in the treatment of the diseases, but in many cases were positively injurious. If any of these statements had been true no one with access to the remedies which bore them need have died from any cause other than accident or old age.

"Unfortunately the statements were not true. The shameful fact is that those who deal in such preparations know they are deceiving credulous and ignorant unfortunates who suffer from some of the gravest ills to which the flesh of this day is subject. No physician of standing in his profession, no matter to what school of

medicine he may belong, entertains the slightest idea that any of these preparations will work the wonders promised on the labels.

"Prior to the recent decision of the Supreme Court the officers charged with the enforcement of the law regarded false and misleading statements concerning the curative value of nostrums as misbranding and there was a general acquiescence in this view by the proprietors of the nostrums. Many pretended cures in consequence were withdrawn from the market and the proprietors of the many other alleged cures eliminated false and extravagant claims from their labels, either voluntarily or under the compulsion of criminal prosecution. Nearly one hundred criminal prosecutions on this charge were concluded in the Federal courts by pleas of guilty and the imposition of fines. More than 150 cases of the same nature, involving some of the rankest frauds by which the American people were ever deceived, are pending now and must be dismissed.

"I fear, if no remedial legislation be granted at this session, that the good which has already been accomplished in regard to these nostrums will be undone and the people of the country will be deprived of a powerful safeguard against dangerous frauds. Of course, as pointed out by the Supreme Court, any attempt to legislate against mere expressions of opinion would be abortive; nevertheless, if knowingly false statements of fact as to the nature of the preparations be provided against, the greater part of the evil will be subject to control.

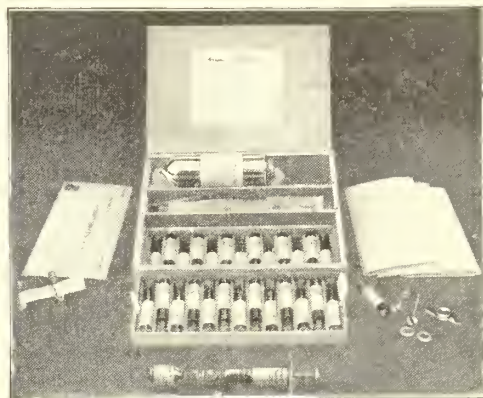
"The statute can be easily amended to include the evil I have mentioned, and I recommend that this be done at once as a matter of emergency."

THE TREATMENT OF HYDROPHOBIA BY RABIES VACCINE.

Until recently it has been necessary to send patients exposed to hydrophobia to a Pasteur institute (in many instances located in a far distant city) for prophylactic treatment. The Hygienic Laboratory of the United States Marine Hospital Ser-

vice devised a method of administering rabies vaccine, whereby it could be prepared at a central laboratory, according to Pasteur's method, and distributed to any part of the United States, allowing the patient to be treated by his attending physician.

Briefly, the following is Pasteur's method for preparing rabies vaccine: The spinal cord of a rabbit—dead of rabies as result of an injection of a "fixed virus"—(Rabies Vaccine known to kill within a fixed time) is removed under aseptic conditions. A cord containing the Rabies Virus is suspended over a layer of potassium hydroxide and kept at a temperature of 22 degrees C. from one to eight days.



The virus is gradually weakened or attenuated as the cord is dried, the strength being decreased in direct proportion to the extent of the drying.

In the preparation of each injection, a portion of a cord in which the virus has been properly attenuated by drying the requisite number of days, is taken and emulsified by grinding under aseptic conditions with a weak solution of glycerin. The emulsion of Rabies Virus thus prepared constitutes the first dose.

The second dose is prepared in the same manner from a portion of the cord which has not been attenuated to the same degree, and each subsequent dose is prepared in like manner from cords containing virus of increasing potency.

The technique of the administration is

quite as simple and safe as the ordinary hypodermatic injection.

H. K. Mulford Company has built and equipped special laboratories at Glenolden, Pa., and, under the personal direction of expert bacteriologists are preparing Rabies Vaccine after the method of Pasteur.

THE RABIES PREVENTIVE TREATMENT.

The preventive treatment of rabies, as furnished by the H. K. Mulford Company consists of twenty-five injections of Rabies Vaccine, the strength of each injection varying in accordance with the plan of treatment adopted by the Hygienic Laboratory of the United States Marine Hospital Service.

Cords with virus of various strengths are kept in constant readiness for preparation of Rabies Vaccine to meet all emergencies.

The vaccine is furnished in ampuls and all the physician is required to do in making the injection, is to mix the vaccine in the ampul through a special needle, furnished with each syringe, with the physiologic salt solution contained in each syringe, then inject the patient. The technique is as simple as an ordinary hypodermatic injection.

Special caloris vacuum bottles are used in the shipment of each day's supply of vaccine, insuring its receipt in a satisfactory condition.

Preventive treatment by Rabies Vaccine should be started as soon after exposure as possible. After symptoms have fully developed there is no hope for relief, as a cure for hydrophobia has not been discovered. The period from the exposure to the development of the symptoms of hydrophobia is known as the period of incubation. This varies from eight days to six months under natural conditions, although occasionally cases are reported where the incubation period is much longer.

Immediately following exposure, every precaution should be employed until it is proven that the suspected animal did or

did not have rabies. Aside from cauterizing and otherwise treating the wounds, arrangements should be made at once for the use of Rabies Vaccine in the form of preventive treatment prepared after the method of Pasteur.

If the animal responsible for the wound or infection is alive, it should be kept securely under observation for at least two weeks. Infection may follow from the bite of an animal apparently normal at the time of biting. Not until it is definitely known that the animal has rabies should it be killed. After the animal is dead its head should be removed and sent to a State or municipal laboratory equipped to properly examine the brain for evidences of rabies.

If proper precautions are taken and the patient immediately given the Pasteur treatment, the fatality from this terrible disease may be virtually reduced to a minimum.

According to statistics rabies is more common in the summer months, therefore at this season of the year, with danger of mad dogs running amuck, the method of supplying Rabies Vaccine so that the physician may administer it to his own patients is of particular interest to our readers.

Full and complete literature on Rabies Vaccine will be mailed by H. K. Mulford Company, of Philadelphia, upon request.

NATIONAL CONFEDERATION OF STATE MEDICAL EXAMINING AND LICENSING BOARDS.

The twenty-first annual convention of the National Confederation of State Medical Examining and Lincensing Boards was called to order at the Congress Hotel, Chicago, Ill., by the President, Dr. Joseph C. Guernsey. Dr. George W. Webster, of Chicago, Chairman of the Committee on Arrangements, delivered a cordial address of welcome, which was ably responded to by Dr. Lee H. Smith, of Buffalo.

The President delivered the annual address, choosing for his subject "Medical Licensure." The report of the Secretary-Treasurer, Dr. George H. Matson, was

read, audited and approved. The report of the Committee on Clinical Instruction by Dr. Henry Beates, Chairman, and that on *Materia Medica*, by Dr. Murray Galt Motter, were read, referred for publication and the committees continued. The report of the committee on Mr. Flexner's paper, published in the proceedings for 1910, was read by Dr. N. P. Colwell. After an extended discussion the report was adopted as read and the committee discharged.

The symposium on "State Control of Medical Colleges" was discussed from the view points of state law, the medical colleges, State medical examining and licensing Boards and the medical profession. From the viewpoint of the State, Charles William Dabney, Ph.D., LL.D., President of the University of Cincinnati, read a paper in which he contended that the State could control and conduct medical colleges more efficiently than corporations and private individuals. From the same viewpoint Mr. Abraham Flexner, of the Carnegie Foundation for the Advancement of Teaching, New York City, read a paper on "The Duty of the State in the Control of Medical Colleges," advocating this system. From the viewpoint of the law, Hon. Charles Alling, Jr., Chicago, read a paper giving his opinion that the courts would uphold the system. Dr. Arthur Dean Bevan, Chicago, discussed the question from the viewpoint of the medical colleges, setting forth the advantages of State control, (a) as regards uniformity of requirements and methods, (b) as giving adequate financial support. From the same viewpoint F. C. Waite, A.M., Ph.D., Cleveland, forcefully and hurriedly pointed out the evils inherent under the present system and expressed the opinion that the spirit of competition and commercialism would be eradicated if the State controlled the medical colleges. Dr. Frank Winders, Columbus, O., read a paper in which he contended that with aid rendered by the State, medical education would become more efficient by having all teachers receive a compensation commensurate with their labor, and by having a larger num-

ber devote their entire time to teaching than now obtains. From the viewpoint of the State Boards of Medical Examiners, Dr. Edward Cranch, Erie, Pa., declared that the Medical Boards could more efficiently enforce the laws regulating the practice of medicine and the requirements of the Board if medical education were under State control. From the same viewpoint Dr. James A. Duncan, Toledo, presented a paper on the subject, "If Medical Colleges Were Under State Control, Would the State Medical Boards Be Enabled to Determine More Fully the Standing," which question he answered in the affirmative. For the medical profession Dr. Royal S. Copeland, New York City, said that if medical colleges were under State control the medical profession would be more uniformly and efficiently educated and trained than by the present system. Dr. Horace G. Norton, Trenton, N. J., presented a paper in which he held that since the medical colleges are the source of the medical practitioner upon which devolves the care and the welfare of the people, they should be under State control. Special papers on the following subjects were presented: "The Necessity of Establishing a Rational Curriculum for the Medical Degree," by Dr. Henry Beates, Philadelphia; "Some Thoughts on the Supervision of Medical Colleges and the Conducting of State Examinations," by Dr. James A. Egan, Springfield, Ill.

The Oregon State Board of Examiners, the Louisiana State Board of Medical Examiners (Regular); Dr. R. S. Copeland, New York City; Dr. James H. McDonald, Pittsburg; Dr. F. F. Lawrence, Columbus, and Dr. C. M. Hazen, Bon Air, Va., were admitted to membership in the Confederation.

The attendance was the greatest in the history of the Confederation, and the enthusiasm which began at the opening continued throughout the session. All papers were earnestly and intelligently discussed, the interest becoming so intense that it was necessary to limit the period of the discussions.

BOOKS RECEIVED.

DIAGNOSTIC AND THERAPEUTIC TECHNIC. By Albert S. Morrow, M.D., Adjunct Professor of Surgery, New York Polyclinic. Octavo of 850 pages, with 815 original line drawings. Philadelphia and London: W. B. Saunders Company, 1911. Cloth, \$5.00 net.

PRACTICAL CYSTOSCOPY AND THE DIAGNOSIS OF SURGICAL DISEASES OF THE KIDNEYS AND URINARY BLADDER. By Paul M. Pilcher, M.D., Consulting Surgeon to the Eastern Long Island Hospital. Octavo of 398 pages, with 233 illustrations, 29 in colors. Philadelphia and London: W. B. Saunders Company, 1911. Cloth, \$5.50 net.

A TEXT-BOOK OF MEDICAL DIAGNOSIS. By James M. Anders, M.D., Professor of the Theory and Practice of Medicine and of Clinical Medicine, and L. Napoleon Boston, M.D., Adjunct Professor of Medicine, Medico-Chirurgical College, Philadelphia. Octavo of 1195 pages, with 443 illustrations, 17 in colors. Philadelphia and London: W. B. Saunders Company, 1911. Cloth, \$6.00 net; half morocco, \$7.50 net.

WHAT TO EAT AND WHY. By G. Carroll Smith, M.D. of Boston, Mass. Octavo of 310 pages. Philadelphia and London: W. B. Saunders Company, 1911. Cloth, \$2.50 net.

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BOOKS REVIEWED.

MERCK'S MANUAL OF THE MATERIA MEDICA. (Fourth edition.) A ready reference pocketbook for the physician and surgeon. Containing a comprehensive list of chemicals and drugs—not confined to "Merck's"—with their synonyms, solubilities, physiological effects, therapeutic uses, doses, incompatibles, antidotes, etc.; a table of therapeutic indications, with interspersed paragraphs on bedside diagnosis and a collection of prescription formulas, beginning under the indication "Abortion" and ending with "Yellow Fever"; a classification of medicaments and miscellany, comprising poisoning and its treatment, and an extensive dose table; a chapter on Urinalysis, and various tables, etc. (Merck & Co., 45 Park Place, New York. 1911. 493 pages. Sent on receipt of forwarding charges of 10 cents, in stamps, to physicians or to students enrolled in any college of medicine in the United States.)

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THE USE AND APPLICATION OF CARBON DIOXIDE SNOW.*

BY J. M. KING, B.S., M.D.,

Professor Dermatology, Vanderbilt University.

Upon occasions of this kind one is very apt to turn attention to questions of reform along some line of advancement in the professional, social or religious world, and to invent schemes and recommend plans of improvement, many of which may be impracticable and soon forgotten; or it is very usual to rehearse the trials and brilliant successes of some renowned practitioner; or to revel in beautiful ideals, or moralize in solemn platitudes for the enjoyment of the older and the inspiration of the younger members present. While all this is not inappropriate or to be condemned, I have decided to present tonight a rather practical subject—the *therapeutic use of refrigeration with carbon dioxide snow*.

Refrigeration, in relation to the subject of which I wish to speak, was first practiced with liquid air, but on account of the difficulty and almost impossibility of obtaining it, a substitute was sought for and found in carbon dioxide snow. The freezing point of CO₂ is 80 degrees C., while that of liquid air is 180 degrees C., yet this variation in temperature makes but little difference in the effect on tissue to which they may be applied. Jackson states that "there is no difference in the effect on the tissues

whether we use liquid air or carbon dioxide, except that the effect is more rapidly obtained by the former."

Carbon dioxide snow, as well as being a substitute for liquid air, is also a substitute, to a certain extent, for the older method of electrolysis and the newer treatment with radium and is, in some respects, more acceptable. CO₂ snow is used successfully at the present time to remove naevi of practically any type of the smaller size, also warts, lesions of lichen planus, keloids, lupus erythematosus epitheliomata, etc., but more of its use later.

The therapeutic principle underlying the use of CO₂ depends upon a sudden freezing of the living tissue, producing an acute inflammatory reaction which is followed by absorption and atrophy. The extent of reaction produced depends upon the time of exposure and the pressure made on the part during the time of exposure, and on account of this fact the degree of inflammation desired may be fairly well controlled, varying it from a mild stimulating effect to that of total destruction of the tissue. But its most valuable action is not that of an escharotic which destroys all the cells and tissues alike with which it comes in contact, but rather that of an agent which produces an inflammatory reaction sufficient to destroy epithelial tissue and diseased tissue of low vitality without producing necrosis of the white fibrous tissue. Its action thus results in an interstitial sclerosis or interstitial scar formation which enables the removal of

*Read before Nashville Academy of Medicine.

growths by this method with minimal surface scarring. In this selective action it is to a certain extent similar to X-rays and arsenical paste in their use in treating epitheliomata of the skin.

In the application of solid CO₂ there are two factors as before stated which control the extent of the freezing—pressure and time. If the surface is lightly touched with the snow, the freezing is instantaneous but is only superficial. If the pressure is made the freezing may range from 1/32 to 1/8 of an inch in depth, depending, as a matter of course, on the time also. The lighter the pressure and the shorter the time, the more superficial the freezing and less the inflammatory reaction, and *vice versa*. It also follows then, that in the application of CO₂, one must vary the pressure and time with depth of freezing desired and the effect one wishes to produce. This brings in the question of personal equation, which experience alone can develop. One must use his judgment in estimating the pressure and time required for a given lesion.

While the amount of pressure is important, time is more so, for the application is measured by time—by the watch—so many seconds for each application. The application of five to ten seconds produces an acute dry dermatitis. If made from twenty to thirty seconds there is an intense reaction, usually with the formation of a bulla and the result of a certain amount of ultimate sclerosis of the skin without apparent scarring, but with a permanent whitening of the areas. With a minute or more of exposure there follows a bulla with the formation of a thin dry crust which separates in two or three weeks, leaving a thin, white scar. While time and pressure can be fairly well controlled and the results are about as stated above, yet the tissue in some cases yields more readily than it does in others similarly, as the tissue by electrolysis will be more easily destroyed in one individual than in another. The same application will produce a stronger reaction in a child than in an adult. The reaction is also greater in women with thin skin. Pusey has observed

that the reaction for the same time is more marked and more effective on lesions that have been previously treated with X-rays or radium to the point of producing a mild dermatitis. He has treated successfully some vascular naevi with CO₂ after exposure to X-rays, that had failed to yield to the same treatment before exposure. He explains that the already existing endarteritis, associated with the dermatitis of X-rays, is so intensified by the freezing that the effect relatively is much more marked than it is on normal tissue.

The CO₂ which is used is contained in the ordinary commercial cylinder about five feet long and about six inches in diameter. The gas has been liquified under pressure in the cylinder and is allowed to flow out by releasing the valve, when it may be caught in a chamois skin pocket in the solid or snow-like form for use. The snow may be molded into any form or shape desired in metal or hard rubber cylindrical molds, and may be trimmed with a knife to any shape or sized point. I have found a set of ordinary aluminum ear specula very convenient for shaping the snow into sticks for application. The speculum is held in a piece of chamois skin and the snow is packed in with a round wooden rammer or a lead pencil, or the speculum could be held on end and the rammer tapped with a mallet to make the snow harder and firmer, enabling it to remain longer in the solid form.

Other devices have been contrived for collecting and moulding the snow, but I do not think they have any advantage over the plan above described, which was used by Dr. Pusey in his early experiments with CO₂.

Dr. Judd, of Rochester, Minn., has attempted to improve upon the use of CO₂ by mixing it with ether to the extent of a semi-solid consistency. This was applied to the surface with cotton swabs as liquid air is applied. Dr. Jackson, of New York, changed this by dipping the stick of CO₂ into ether immediately before applying it to the lesion. It was thought that the freezing was more rapid by the addition of the ether. But this question was tested out by

Dr. Pusey and he found that the mixture did not produce a lower temperature than the CO₂ alone. Clinically he observes no difference. I have tried both methods and now I do not use the ether, for I cannot observe any advantage in its addition.

The area to which the snow is to be applied should be cleansed to prevent infection. The freezing is then done, using the best judgment as to the size and shape of the stick of snow and the time and pressure in application. After the treatment, if blisters rise, I think they should be drained, being careful not to destroy the epidermis. The surface may be sponged with alcohol or hydrogen peroxide once or twice a day. Other lotions and powders and ointments should

The field for the application of CO₂ may be covered by three heads:

First—Those conditions of small circumscribed areas in which stimulation is beneficial, as in chronic eczema.

Second—Those conditions in which certain tissues are to be destroyed in the skin by interstitial sclerosis, as in naevi.

Third—Those conditions in which it is desired to destroy masses of diseased tissues in the skin, as in lupus.

Solid CO₂ has been recommended in *chronic eczema*, *lichen planus* and other chronic circumscribed dermatoses, and favorable reports have been made on chronic eczema. I believe that in well selected cases its use would hasten recovery.



Cylinder of Carbon Dioxide Gas, with Chamois Skin and Ear Specula

not be applied unless the area becomes infected. If the lesion is on the trunk or under the clothing, a gauze pad laid on and suspended with adhesive plaster is advisable, and the place should be sponged with alcohol or peroxide and dressed daily for a few days. The scales and crusts should be allowed to fall off. Rose ointment should be lightly applied when the scales are dry and about to exfoliate.

I have used CO₂ now many times without any unfavorable or unsatisfactory results. Very little pain is associated with its use, no anaesthetic being needed. There is but slight pain afterwards, but if there should be much pain in a neurotic patient, warm or cold compresses should give relief; however, I have not found it necessary to apply anything for the after pain.

Workers with CO₂ have unanimously reported good results. Heidingsfeld, in a case of vascular naevus of the arm, had slough and hemorrhage. The scar, if any, is soft and atrophic and of excellent character. Of course, bad results could follow unintelligent practice.

Lupus Erythematosus.—This disease had responded well to the use of liquid air. Both favorable and unfavorable reports have been made, but the results of its use in this disease are so much more definite than those obtained by any other treatment that some men use it exclusively. It gives its best results in the dry, scaly, discoid type of the disease.

Lupus vulgaris has been successfully treated by the conjoined use of X-ray and solid CO₂.

It is the most valuable agent in small circumscribed spots of *Chloasma* and *Senile Lentigo*.

In *tattoo marks* and *powder stains* some have made favorable reports, while others have reported unfavorably.

Keloids, *Hypertrophic scars* and *Xanthoma planum* of the eyelids have been successfully treated.

Pusey has obtained better results from CO₂ in the removal of *warts* than from any other method. He uses it in all varieties. Zeisler used it successfully in a case

of *Keratosis palmaris*. Pusey recommends it in callosities of the feet.

The most beautiful adaptation of solid CO₂ is in the removal of *naevi*, as many workers can testify. MacLeod, in demonstrating three cases of naevus before the Dermatological Section of the Royal Society of Medicine, stated that, "As far as his experience had gone, he found it had excelled every method he had tried for the treatment of the raised *vascular naevi*. It has certain advantages over the treatment of such lesions by radium in that the results are as good, if not better, as far as the scar is concerned, and the treatment is more simple and rapid and far less costly."

Morton, who has done much work on *naevi* at the London Hospital, states: "Personally, I look upon solid CO₂ as a most important addition to the list of physical agents employed in therapeutics since that of radium, and as I have already stated, I predict that it will be found to compete successively with radium in the treatment of many superficial lesions."

In some vascular naevi it is advisable to use electrolysis in conjunction with CO₂ snow.

I have treated a number of moles, pigmented naevi, and vascular naevi with solid CO₂, and it has given as fine results as could be desired.

Senile Keratoses are smoothed off as if by magic by the use of CO₂. I have removed a great many with it, leaving the skin in a smooth, healthy condition.

Even *epitheliomata* have been successfully removed by this method by men of high authority, and I think it is legitimate provided the lesions are extremely superficial and the proper time and pressure used. But in the treatment of this disease the greatest care and judgment should be exercised and only the most suitable cases should be thus treated.

CO₂ snow, while comparatively new, has been sufficiently tested and has become firmly established. It is in common use in this country and has been adopted by many prominent English dermatologists, who speak of it in the highest terms. The French

have lauded radium for its results in the treatment of naevi and superficial epitheliomata. Wickham, of Paris, has done probably more work of this kind with radium than any one else. Before the Section of Dermatology of the British Medical Association, 1910, he read a full report of his work, and from all I can observe and read on the subject I am compelled to conclude that I fail to see that radium has any advantage over CO₂ snow, as far as good results are concerned in the removal of naevi and allied growths. On the other hand, CO₂ snow has the advantage of allowing the operation to be done in a few minutes at a minimum of cost and practically without pain, and the results are equally as good if not better than those obtained with radium. The old method of electrolysis must not be discarded in this work, but is to be used where reason demands, and probably in conjunction with CO₂.

In conclusion, gentlemen, let me say that we should honor the name of Dr. Wm. Allen Pusey, a Kentuckian, for the discovery of the therapeutic use of solid carbon dioxide. The discovery scarcely ranks with the epoch-making operation of Ephraim McDowell, the silver wire of Marion Simms, or the adaptation of chloroform by Crawford Long, but it is a valuable addition to the therapeutic agents we use in the practice of medicine and surgery. The knowledge of this subject may enable some of us to select and use the most appropriate means for the successful treatment of the case in hand, be it large or small.

DIAGNOSIS AND TREATMENT OF ACUTE INFLAMMATORY GLAUCOMA.*

BY WALTER DOTSON, M.D., GALLATIN, TENN.

Since the Tennessee State Medical Association is not divided into sections, for its scientific work, but all sections meet together and read and discuss all papers in common, it is more desirous and appropriate that any paper presented by an

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ophthalmologist should not be of interest to the ophthalmologist only, dry, uninteresting, tiresome and not needed by the rank and file of our profession, which are in the great majority at the annual meetings of this association.

In selecting a subject to present on this occasion, I will admit that I have named one which is old, well-worn and very common, but nevertheless it should be of interest, and is of profound importance to be able to correctly diagnose and treat, acute inflammatory glaucoma. This is not only important to the ophthalmologist, but especially so to the general practitioner, who, after all, is the bone and sinew of our great profession.

It has been said that glaucoma fulminans, which is one variety of acute inflammatory glaucoma, is the most painful as well as the most dangerous diseases which human flesh is heir to. Glaucoma fulminans may attack a strong, robust, healthy man, and suddenly reduce him to prostration, and a nervous wreck which may be followed by complete blindness in a few hours. The onset of this affection is extremely acute without characteristic or even prodromal symptoms whatsoever. It is acute inflammatory glaucoma intensified, having the same pathology and treatment as any other acute glaucoma. Fortunately this form is rare, but when we do meet with it we should be able to recognize it and apply or cause to be applied the proper treatment at once. With proper treatment applied at the proper time, which is at once in fulminating glaucoma, we may be able to relieve the greatest pain and prevent our greatest dread in this life, *blindness*.

In any other form of acute inflammatory glaucoma we will find it characterized by a few of many symptoms. At least twenty symptoms are found in different cases of acute glaucoma, but we may not find more than five or six of these symptoms in any one case. However, a positive diagnosis can be made by three symptoms if they are positive symptoms. I would divide the symptoms into positive and probable symptoms. Any number of each or either, may be found in

each case of acute glaucoma. Increased intraocular tension is a positive symptom of acute glaucoma. Increased tension of the eyeball seems to be both the cause and effect of the disease. It is always present in some degree. We find varying degree of plus tension, from normal to stony hardness of the ball. The degrees are usually denominated as T+1, T+2 and T+3. Increased tension existing in the eyeball is the cause and producer of many or nearly all other symptoms of glaucoma. It should be made a regular rule and routine practice to examine the tension of every painful or inflamed eye, and every eye which has a rapid decreased vision, that we are called upon to examine or prescribe for. The tension should be tested and compared with the tension of the other eye, and if we are not satisfied with this comparison we should compare it with other normal eyes present or even with our own eye. When positive increased tension is found in any eye we can then look for a chain of resulting symptoms, any number of which may or may not be found in any acute case. The symptoms I would call *positive*, if found, are cupping of the optic disc with sharp or overhanging edges around the cup. This symptom is produced by the increased intraocular tension forcing the entrance of the optic nerve back through the entrance of the outer coats of the eye, which is the weakest place of the eye cavity. This cupping and arterial pulsation seen at or near the disc are both positive symptoms, and if found in connection with tension are sufficient to verify your diagnosis of glaucoma. While we believe that cupping of the optic disc and probably arterial pulsation of some of the retinal vessels are absolutely present in every case of glaucoma, we must admit that they cannot often be found at the height of an acute attack. They can only be seen with the ophthalmoscope, which requires a clear cornea and transparent media. They can always be detected in chronic glaucoma or in the interval existing between acute attacks of inflammatory glaucoma. However, if we are not able to examine the eye fundus with the ophthalmoscope during the at-

tack, we will then note the obstructions to our vision which are probable symptoms of acute inflammatory glaucoma. (1) Haziness or steamy cornea, resembling breath blown on a cold window glass. (2) Anesthesia of cornea, which also results from internal pressure. This will be noted by touching the cornea with cotton or a string. The cornea normally is so sensitive that the slightest touch of a cotton swig will cause the lids to close tightly, but the corneal anesthesia of glaucoma resembles cocaine anesthesia, and the lids will hardly move when the cornea is touched. (3) Cloudy or partial opacity of the media is another probable symptom and will be found at the height of an acute attack. This symptom may be seen if the haziness of the cornea will permit the aqueous and vitreous humors to be seen. It may be manifested by a linty media giving the pupil a greenish reflex. This large, dull, greenish pupillary reflex is a common symptom of acute glaucoma and is the one from which the disease first received its name.

We therefore notice, on an attempt to examine the uveal tract, that we will always come in contact with some one or more of the symptoms named if we are dealing with glaucoma. Starting with the cornea, if we fail to note the haziness and anesthetic condition of it, we will go deeper with the examination, and if we fail to note a cloudy aqueous humor with a linty, greenish, pupillary reflex, we will proceed with the vitreous, and if we fail to find a cloudy opaque vitreous, then we certainly can examine the eye fundus, and if we then fail to find any pathological cupping of the optic disc or any evidence of pulsation of the retinal arteries, we can feel sure we have not a case of glaucoma.

The symptoms first noticed in an acute attack of glaucoma, and really the ones that bring the patient to you are, (1) pain, (2) inflamed eye, (3) fullness of the eyeball and (4) diminished vision.

The pain may be variable in character and degree, but is always present. This pain is thought by the patient and I regret to say, sometimes by the physician, to be

neuralgia. Neuralgia, poor thing, has many things heaped upon it unmercifully. It is made to bear the sins, sorrows and aliases of many diseases wrongfully. It is many times accused, but not often convicted of the many cases of hopeless blindness in our country today, which were eyes unnecessarily sacrificed.

The inflamed eye which presents itself in acute inflammatory glaucoma differs somewhat from every other ocular inflammation, but without careful examination and comparison it may be confounded with any of them. The redness and congested blood vessels are found surrounding the cornea. It differs from acute conjunctivitis by the depth of the congested vessels. In glaucoma the congested blood vessels are deeper, appear to be scleral or episcleral vessels. The vessels do not run off from the ocular conjunctiva and bend onto the palpebral conjunctiva becoming larger as they near the fornix, as in conjunctivitis, but they remain deeper following the scleral sphere and appear to fade away as the conjunctiva is reflected from the sclera. We can determine the location and depth of the congested vessels by making pressure on the eyeball through the lower lid. If the vessels are conjunctival and are superficial we can massage all the blood out of them this way and the point will be pale when the pressure is removed, but will be seen to refill again. The scleral vessels, being so much deeper, are not so easily emptied, and will remain red when the pressure is removed.

The inflamed eye is differentiated from an acute iritis by the color and length of the vessels, and by the depth of the anterior chambers, the size of the pupil and inflamed iris. The blood vessels in an acute iritis are located deeper, shorter in length, and paler in color. We call it a ciliary congestion, as the congested vessels surrounds the iris and extend in length to about the margin of the ciliary process (4-6 m. m.) and then fade entirely away, and from the blending of the vessels with the white sclerotic coat it produces that characteristic *pink colored* zone of ciliary congestion of

acute iritis. Iritis shows an inflamed iris, with a small or contracted pupil, with almost normal depth of anterior chamber of eye with no increased tension, while glaucoma is characterized by a shallow anterior chamber, dilated pupil, increased tension with almost normal iris.

Glaucoma can more readily be differentiated from acute keratitis by the absence of the characteristic symptoms above named and by the extreme photophobia of keratitis and especially by increased (?) sensitive cornea in keratitis and the anesthetic corneal effect in acute glaucoma. Acute attacks of inflammatory glaucoma have also been mistaken for acute indigestion or bilious attacks. Extremely acute attacks are frequently accompanied by nausea, vomiting, vertigo, etc., but the only way to mistake the glaucoma is a failure to examine the eye. When there is eye pain, examine every eye and test the intraocular tension.

The most frequent form of glaucoma and the most difficult to correctly diagnose, is the mildest form of recurrent attacks of acute inflammatory glaucoma; especially is this true of the first attack or first few attacks. The attacks are very short and all the symptoms are very much modified. The pain is not so severe, the inflammatory action not so great, and the tension not so high, but is always increased. The milder or first cases are usually preceded by well marked prodromal symptoms, such as seeing light flashes, noticing a halo around a light, diminished vision, and the most important of all prodromal symptoms is the rapid failure of accommodation. This produces a rapid and marked presbyopia, and this one symptom should always excite our suspicion of acute glaucoma.

We may get a history of previous attacks, but should not be misled by believing our patient has recovered. The case only subsides, leaving the eye and its vision impaired, to recur again, and possibly with much greater severity. Once we have acute glaucoma, which is not properly cared for, we may expect it to recur again and again and at shorter intervals and with greater severity, until the eye is completely blind,

and then it may continue as a source of pain and irritation at intervals until the eye is enucleated.

Treatment.—The treatment of glaucoma may be divided into non-operative and operative. *Non-operative treatment* consists in correcting any error of refraction, correcting errors of eating, drinking, sleeping and habits. Tone the system to as near normal as possible with the use of indicated internal remedies. Local measures, in my experience, are limited to only two things: (1) Myotics instilled into the eye and (2) sub-conjunctival injections. The best myotics are eserine, $\frac{1}{4}$ to 1 per cent solution combined with morphia 2 to 4 per cent solution. Morphia seems to counteract the conjunctival congestion produced by the eserine, and relieves pain both by its absorption and by its myotic effect on the pupil, drawing the iris away from the angle of the anterior chamber, and opening the iris crypts of Fuchs.

Sub-conjunctival injections of sodium citrate $4\frac{1}{2}$ per cent solution acts better than any other known agent in reducing the increased intraocular tension. Eight drops of a chemically pure, sterilized solution is injected daily into the upper fold. Just how this reduces the tension I do not know, but then just how the tension was increased has never been clearly and satisfactorily explained.

Operative treatment of acute inflammatory glaucoma consists of iridectomy, paracentesis, cyclodialysis and enucleation.

Many other operations are proposed and have been done for the relief of glaucoma, but my own personal experience has been confined to the ones named above, and they are named in their order of importance.

Iridectomy is and should be the first operation thought of or even considered. This operation should be done first if we can get the patient's consent, and it be possible to complete the iridectomy without injuring the cornea or lense or capsule.

Paracentesis of the anterior chamber will be permitted by some patients who would object to a complete and large iridectomy. An attempted iridectomy might prove dan-

gerous or even impossible to be completed, and we would then call the operation (incomplete iridectomy) a paracentesis. Iridectomy for glaucoma is entirely different from an iridectomy for artificial pupil. Simple iridectomy or iridectomy for cataract. It is performed in a different manner and is much more difficult to do than any other iridectomy. The inflamed eyeball, the increased intraocular tension and the close proximity or actual contact of the iris with the cornea renders its execution very difficult, and it should be attempted only by those with special training, delicate touch, and perfect control of their instruments. The iridectomy, to be of benefit in this case, requires the removal of a large portion of the iris and should extend well back to the root or insertion of the iris, leaving a large keyhole coloboma. In cutting the portion of the iris drawn out by the forceps, the scissors should make several close clips following the insertion of the iris, while continued traction is made with the forceps, *i. e.*, the iris should be almost torn away in place of one clean cut. This establishes drainage between the anterior and posterior chamber, and at the point of the coloboma the pressure which obliterates the angle of the anterior chamber is removed and normal drainage established. Many eyes with good vision can be saved by an early iridectomy, but if the vision has already been sacrificed we should perform the iridectomy for the relief of pain and to prevent future inflammatory attacks.

Iridectomy is the greatest of all primary operations for glaucoma, but after the operation has been done, and the pain and increased tension continue, or should we have a recurrence of the disease, I would not further mutilate the iris by doing a second or third iridectomy, but would do a cyclodiolysis. I have seen the pain relieved and tension reduced from a T+3 to T+1, following a cyclodiolysis. This operation has fallen into disuse as a primary operation, unless the eye be blind before operation, and then it seems to be the ideal operation.

Enucleation is, of course, reserved as the last resort, but we find many cases which

have been neglected until the eye is blind, and the eyeball or some parts of it are undergoing a stage of degeneration. Two such cases have fallen to my lot this week. The pain and inflammation continue until the globe ruptures or is enucleated. Examination of an enucleated ball yesterday showed atrophy of the iris and lense, detached retina, two posterior choroidal staphylomas, and the vitreous was muddy but very thin and liquid.

Any blind eye that begins a stage of degeneration should be enucleated at once. It relieves the pain and inflammation and prevents panophthalmitis, meningitis and sympathetic ophthalmitis in the other eye, which should always be protected from the ill-fate which befalls its fellow eye.

DISCUSSION.

Dr. T. J. Herron, Jackson: At the last meeting of this association in this city I read a paper on acute glaucoma and its treatment. I shall not attempt to go over the symptoms, but if you will read the paper that has been presented thoroughly you will get a great deal of information out of it, and be able to make a diagnosis of acute glaucoma. There are one or two symptoms I want to bring out that I have found are of assistance to me, and I hope the author of the paper will excuse me for doing so. First, as to the importance of early diagnosis in acute glaucoma. Frequently these patients come to us when they are in doubt as to the trouble. The general practitioner has sent them to you for a diagnosis. These patients go to the general physician first. He examines the eye; the patient has pain and tenderness over the eye, the pain extending down over the cheek, and with this acute pain there is inflammation of the eye. With two or three symptoms you can be sure in making an accurate diagnosis of acute glaucoma. How are you going to differentiate acute glaucoma from an acute iritis? If you will take the patient to a window where there is good light and place the hand over the good eye, the pupil will not respond to light, but will be contracted, in a case of iritis, when you place the hand over the bad eye and ask the patient to look you will notice the iris responding and contracting in the good eye. If the iris does not respond after you remove the hand or does not contract to the light you may know it is not as a rule acute glaucoma, because there is an acute inflammation in the iris. But if the iris has dilated and does not contract to the light you may know with certain other symptoms that you have a case of acute glaucoma to deal with. I am mentioning these things for the benefit of the general practitioner because the specialist is up on these points.

Early diagnosis and operative treatment are the two essential things in regard to the preservation of vision. You have an acute pain in the eye, but how are you going to compare the tension in the two eyes? The doctor brought out that point. You place your index fingers over the ball of the eye, tell the patient to look down towards the floor and you compare the tension of that eye with the other eye, or you can compare it with the tension of the eye of some one else. If you find hardness in these acute cases, with non-contraction of the pupil, these are two symptoms of glaucoma, and then another symptom is that in acute glaucoma you will have pain in the daytime principally. In acute iritis you will have pain in the night. That is another important differential sign. If you find and make up your mind that the case is one of acute glaucoma do not hesitate in using some form of treatment or refer the patient to a specialist, because every one of these acute cases go blind unless operated on. I never tamper with the treatment. It does not pay. Take a lady or gentleman who comes with an acute glaucoma, by giving eserine you may allay the symptoms for months, but they will return. The patient will get careless and not use the eserine, and it means the use of eserine for a long time. When acute glaucoma comes on it means that sooner or later the patient should be operated upon, as it is very essential in these cases, and it is only by operation that vision can be preserved. The earlier you operate the more important it is to the patient, and if you operate early you can save ninety-nine patients out of a hundred.

Dr. O. Dulaney, Dyersburg: These gentlemen in outlining the diagnosis of acute glaucoma have laid especial stress on pain. I would like to say that you cannot depend on pain as a symptom of acute glaucoma. In the last year I have seen two cases of glaucoma where a diagnosis could not be made on the symptom of pain alone. One patient was a woman, seventy-seven years of age, whom I referred to Dr. Ellett. A second examination was made ten days later by Dr. Ellett. Both decided positively it was a case of acute glaucoma. The first symptom complained of was dimness of vision, and the vitreous was cloudy. The first impression made by an examination with the ophthalmoscope was that she had a cataract. The other case was a man, forty years of age, who had syphilis. He was referred to me by a physician who had made a diagnosis of glaucoma, and I made the examination, verified the diagnosis with the ophthalmoscope, and found he had decided cupping. He had symptoms that indicated the cause of the trouble was syphilis, and after instituting proper antisyphilitic treatment and keeping the pupil contracted by the use of eserine, this man was relieved. This was a year ago, and there has not been a return of the pain since.

Another thing we should emphasize is the secondary cases of glaucoma. In some of these we find obscure vision from an opacity, and we are not able to

examine the fundus, and we are often confronted or bothered over the point as to whether we have a case of iritis or glaucoma. In quite a number of old chronic iritic cases later on or as a secondary trouble we have glaucoma following, and if these cases are neglected in a short time degenerative changes result and produce glaucoma. In old chronic iritic cases where vision is entirely destroyed and where you have had corneal opacities and corneal ulcers, the best thing for the physician to do is to advocate the removal of the eye as it is unsightly, and insist on these patients having artificial eyes instead.

Dr. M. M. Cullom, Nashville: I only want to say a word or two with regard to the paper because Dr. Dotson has not left very much to say after presenting his very complete paper.

To my mind the most important thing in cases of glaucoma is the diagnosis. The quicker the diagnosis is made the safer the vision of the patient will be and that is the great thing we are working for, namely, saving the patient's sight. There are several things that are of great importance about an inflamed eye, but the one that should alarm the general practitioner most is pain. Almost any trouble that gives pain in the eye is dangerous, and unless you are sure what you are dealing with, it is best to have some one see it who sees these cases frequently. The greatest danger is confounding iritis with glaucoma for the reason that you may make a disastrous mistake. You ought to be careful in the use of atropin. Formerly it was a common thing for a physician to instill atropin in any eye that was inflamed. That is not done so much now. If you take a case of incipient glaucoma and put in a drop of atropin you will in all probability precipitate a violent attack, and it is not an easy thing to differentiate. I have seen mistakes made by some of the best men in the country. When a student in the hospital a patient was sent up by one of the best known men in this country with instructions to put in six drops of a four-grain solution of atropin. He diagnosed the case as one of iritis. I looked at the eye and could not make up my mind whether or not it was a case of iritis and I did not instill the atropin. That was in the afternoon. I looked at the eye two or three times, but could not make up my mind that I ought to carry out the doctor's orders. However, I dropped in one drop of a two-grain solution and by morning the patient had the most violent attack of acute glaucoma I have ever seen, and we had to remove the eye in two or three days. That is what you are likely to do when you drop atropin into a glaucomatous eye. These things are best dealt with by those who are in the habit of looking after them.

There is nothing I can add in the way of treatment. My belief is that the very first thing to do for a case of acute glaucoma is to perform iridectomy, and the operation of iridectomy for acute glaucoma is the most delicate one in surgery. It requires more skill than a cataract operation, for the reason that the lens by reason of tension is forced almost against

the cornea, and you have to push the knife between the posterior layers of the cornea and the lens, and the least prick of the knife will make a cataract and ruin the operation. For that reason it is best to operate on patients of this kind under an anesthetic. Cocain does not act on the inflamed eye or on glaucoma as it does in ordinary cases, and it is impossible almost to anesthetise the iris in cases of glaucoma. For that reason I think we should always use a general anesthetic where we can. Some times in old people it is not safe and we depend upon cocain, but, as a rule, it is best to use a general anesthetic, and it is wonderful to see the change in the symptoms when an iridectomy is done in these cases. The pain stops, the eye quiets down and the inflammation disappears very quickly as a rule.

Dr. Crawford: In cases of acute inflammatory glaucoma I think one of the great points to remember is the history of the case. In all these cases you will get sudden attacks of pain, inflammation and redness of the eye. The disease is confounded with iritis. Iritis will not come on with the suddenness with which glaucoma does, and we often find that the patient will have haloes around the light and with the suddenness of the attack of the acute inflammation. There are always exceptions and you will have haziness of the cornea which we do not have in acute iritis from the beginning. Iritis does not come on in the same way and with the same rapidity and with the same graduated symptoms as does acute glaucoma.

As to the treatment, we all recognize that the first thing to do is to resort to iridectomy, but even that is not always a positive cure, and while it relieves the majority of cases, a great many of them will relapse afterwards, and I think in some instances it is rather over-sanguine. I do not believe it is possible to cure nineteen cases out of twenty, because if this was true it would be almost specific treatment, and it does not prove so in my hands.

Dr. R. S. Doak, Nashville: I think a word of warning to the general practitioner is of value at this time in regard to the relation of glaucoma and iritis. The average general practitioner who has had experience and has heard the lectures at a medical college on this subject is fearful of dropping atropine into an eye that is inflamed for fear he gets it into a glaucomatous eye. I do not think that the instillation of one or two drops of a weak solution of atropine into an eye, should it prove to be a glaucomatous, will do very much harm. It is true, sometimes you get a severe degree of acute glaucoma. I have seen many cases of iritis where the iris has become adherent and the eye forever crippled, if not totally lost, through fear of instilling atropine. These cases cannot be remedied when brought to the specialist for treatment at this late hour.

Dr. E. L. Roberts, Nashville: I believe the statement was made in the paper that the pain is always present, and that is true, but I have a case under observation just now in which there is a minimum of

pain. The patient is practically blind from glaucoma, and yet he has not had enough pain at any time to complain of it. He has gone along, and was treated for some time for primary atrophy, but his case is clearly a case of glaucoma. The cupping is pronounced, tension is increased and yet the patient has not complained of any pain.

Dr. Dotson (closing): I desire to thank the gentlemen for the discussion which my paper has elicited. The last speaker (Dr. Roberts) spoke of having a case of glaucoma in which the patient had never complained of pain. I said in my paper that acute inflammatory glaucoma was always attended with pain. I still think so. We may have a patient with chronic glaucoma who does not have this pain. This is a condition that is confounded with optic atrophy, and not with cases of acute inflammatory glaucoma. Whenever you have a case of acute inflammatory glaucoma the first attack you have is always accompanied by pain. In fact, it is the pain that brings the patient to you. There is increased intraocular tension, a characteristic symptom of acute inflammatory glaucoma.

Dr. Dulaney spoke of a case being mistaken for cataract. Now, gentlemen, this is true. Frequently we find cases come to us that are referred by general practitioners who say that the patients have cataract, or beginning cataract in the eye, when it is nothing more than a case of recurrent attacks of acute inflammatory glaucoma. You take an eye that has had attacks of acute inflammatory glaucoma, the pupillary reflex, the green irregular dilated pupil, gives us the exact appearance of immature cataract.

Yesterday we had a case in the office of acute inflammatory glaucoma, a case of acute iritis, a case of acute keratitis, and a case of acute conjunctivitis. In order to differentiate between them we called out these different symptoms. But on examination with the ophthalmoscope you can always differentiate these cases of cataract from an acute inflammatory glaucoma. Even though at first you do not succeed, you will always find in a case of immature cataract the lens opaque, which seems to be the case in glaucoma, but if you will continue with a minus lens you will bring out the optic disk. You will bring out the cupping which is always present, and if the case has been in existence for any length of time. The diagnosis of acute inflammatory glaucoma as compared with acute iritis, referred to by Dr. Doak, is one of the most important things that confronts the general practitioner of medicine from the standpoint of diagnosis, and it is not an easy matter for him to say whether he has to deal with a case of acute inflammatory glaucoma or one of iritis.

The treatment of one is this way and the other the other way. They are just the reverse. If you are not careful you run the risk of being a party to destroying the eye within a few hours of time. I would not approve of the method of dropping atropin in an eye that I had any suspicion of being involved in acute inflammatory glaucoma. You can tell the difference

between the two. You can with the ophthalmoscope, with the increased intraocular tension, with the greenish pupillary reflex, with the irregularly dilated pupil, differentiate between acute inflammatory glaucoma and the contracted pupil in iritis.

VAGINAL HYSTERECTOMY—THE INDICATIONS FOR AND TECHNIQUE OF.*

BY JOHN A. GAINES, M.D., NASHVILLE.

In this brief paper no attempt will be made to enter historically into the development of vaginal celiotomy, or to compare its merits with abdominal hysterectomy, only in such cases as seem to the writer to be applicable to the vaginal method of hysterectomy, holding that there is a distinct field for both methods and using either as the individual case demands.

While, as Dr. Abel advocates, any non-adherent tumor may by morcellation, be dealt with by the vaginal route. Or, if cystic, after exposing a small area of its surface through a vaginal incision, the fluid is drawn off through a trocar and the collapsed cyst wall grasped and drawn through vagina until the pedicle is reached and ligated. Thus dealing with cysts of any size.

The writer believes the abdominal route unequivocally the best for large solid tumors, and unless one could be certain a cyst was not a semi-malignant, multilocular or villous cystoma, and, what would be even more difficult in large tumors, exclude the possibility of adhesions, the abdominal route is in most instances the safest and best. There are, however, a large number of cases in which the advantages of vaginal hysterectomy, partial or complete, is for many reasons much to be preferred.

These reasons are principally:

The complete absence of operative shock.

The writer has operated on several weak, debilitated patients between sixty and seventy years of age who left the operating table with a pulse rate ranging from 80 to 90, and as good volume as when the operation was begun, and in no case has there occurred a condition of shock from the operation.

There is usually a very slight loss of blood.

The after pain is very much less than by the abdominal route.

There is no intestinal paresis, which in elderly patients is often a very embarrassing sequela of abdominal operations.

There is no tendency to hernia or danger from infection of wound, or necrosis of subcutaneous fat.

There is no danger of peritoneal infection. And, as is needed in most of these cases, a close perineal repair may be made without change of position and with a minimum of time loss. This latter procedure, so often neglected to the detriment and annoyance of the patient through later prolapse of anterior vaginal wall and bladder, is a matter of too much importance to be overlooked. And it will often occur where there is a relaxed vaginal outlet from old, unrepaired lacerations, no matter what method may be adopted of attaching the stumps of the broad or round ligaments to the cervical stump or vaginal apex.

The vaginal method of hysterectomy is indicated for carcinoma of the cervix or corpus uteri, in any case where there are not such glandular involvement as precludes operation by any method.

For non-adherent fibroids not too large to be delivered by the vagina.

Either general myo-fibroma, sub-peritoneal or sub-mucous tumors are easily dealt with in this way. This method is also greatly superior in dealing with prolapsus uteri after the child-bearing period is past, lending itself more readily to the plastic work required to support cystocele and rectocele, one or both of which is always found in association with this condition.

The vaginal route offers ready access to the ovaries or tubes which may be removed, resected, or the tube removed, leaving any part of the ovary desired; with as careful plastic resection as the abdominal route will permit. The only condition offering any difficulty is in cases where from previous inflammation the infundibulo-pelvic ligament is sclerosed, contracted and thickened, which renders it inelastic, in which instance

*Read before Tennessee State Medical Association, Nashville, April, 1911.

it is difficult or impossible to bring it into the vagina. But this is not ordinarily an insurmountable obstacle, for a skillful operator does not of necessity have to bring the ovary into the vagina or external to do plastic work, and the ligament may be ligated and the ovary and tube removed with only a moderate amount of mobility.

The technique adopted and used by myself will be described. It is not put forward as original, but most satisfactory. I wish to emphasize in the outset that no vaginal celiotomy for any cause should be done without a thorough preparation of both vaginal and abdominal fields. In any vaginal hysterectomy conditions may arise, or be found, making it most desirable to finish by the abdominal route, using the combined method, which is preferred by some as a regular procedure.

The patient is anesthetized and placed in the lithotomy position with slight Trendelenburg position of table, the buttocks brought well over edge of table. Then, after a final scrubbing, both externally and, especially, internally, as the vagina cannot be properly cleansed until anesthesia has been induced; the two fingers of the left hand are introduced and the cervix grasped and pulled down with double volcella forceps. When both lips are caught together in the grasp of a strong three-toothed broad forceps of Collin, which has a strong jaw, so that the canal may be thoroughly closed and any desired traction exerted through this instrument. I do not use a posterior speculum at this time. As soon as the cervix is securely grasped the external os is cleansed with gauze wrung from bichloride solution to free it of any mucous or infectious material that may have been pressed out by the firm grasp of the heavy Collin forceps. Then with a scalpel a transverse incision is made on the cervix, just below the attachment of the bladder to the cervix. This incision reaches to within $\frac{1}{4}$ inch of lateral cervical margin and is carried well through the vaginal wall down to cervical tissue. With the handle of the scalpel the tissue is pushed up from the cervix for about one inch, when one or two pairs of

hemostatic forceps are applied in the exact mid line; with these the vaginal flap is raised to the extent it has been loosened, when again inserting the handle of scalpel, or dry dissector, in the mid line and working latterly, the utero-vesical ligaments are raised from above downwards, and first one side and then the other is cut with knife or scissors well out to end of transverse incision. It may be necessary at this time to clip close to the cervix a few fibrous bands reaching from cervix to bladder.

These are exposed by steadying the cervix with the large forceps, grasping both lips of the cervix and pulling gently on the vaginal flap with hemostat placed in median line. When this is done the finger covered with gauze is all that is required to completely separate the bladder from the uterus up to the utero-vesical fold of the peritoneum. Then while an assistant steadies the cervix, the fore finger of each hand is inserted into the wound and lateral separation is carried out far enough to certainly carry the ureters well away from margin of the cervix latterly. Now, the hemostats attached to margin of anterior vaginal flap are held up out of the way by a second assistant or by the fold of a towel round their handles. The cervix is lifted forward, a thin bladed retractor or the forefinger of an assistant on either side may be introduced, when the posterior fornix is widely exposed. I usually have my first assistant pull the cervix well forward and introducing two fingers of left hand dispense with retractors in this step, and make a similar transverse incision on posterior cervical wall $\frac{1}{4}$ to $\frac{1}{2}$ inch below recto-vaginal fold. This incision leaves a narrow bridge of uncut tissue $\frac{1}{4}$ inch wide on either lateral side of cervix. When this posterior incision is carried well through the vaginal wall on the cervix, it is grasped in the median line with hemostatic forceps, as was the anterior incision, only in this location one forcep is sufficient. Traction on this exposes a few strong fibrous bands which require clipping with scissors, when with scalpel handle and finger the tissue may be pushed off the cervix until the recto-uterine

fold of peritoneum is exposed. Up to this time there is ordinarily insignificant bleeding. Occasionally at the lateral margins of the incisions a pair of hemostats may be required for a few minutes, but never enough to interfere with the continuance of operation. The posterior peritoneum is now opened into Douglas' cul-de-sac, either with the finger or with a hemostat pushed through, keeping close to uterus and well away from rectum. The tissues are again pushed away from the lateral walls of cervix, just as was done in anterior wound.

If a large tumor is to be removed, or unusual space is required for any reason, a second incision is made in front, beginning between the two hemostats attached in center of anterior vaginal flap, and this split for one or two inches toward urethra and separated from base of the bladder. At this time a rather long, flat retractor may be introduced into the anterior incision and the utero-vesical fold of the peritoneum exposed, grasped in facia forceps and divided laterally, as I prefer, the forefinger of left hand is passed through the peritoneal opening, posteriorly carried up over right broad ligament where this can be reached and on this finger as a guide a hemostatic forceps is forced through the anterior fold of peritoneum on the finger, or, as may often be done, the finger of right hand may be used instead of hemostat. In either case, as soon as the anterior peritoneal fold is opened, it is torn laterally across at uterine attachment. This leaves the uterus suspended by its lateral attachments, through which its entire blood supply is obtained.

The uterus is now pulled forcibly to the right while a retractor is placed laterally in vagina, exposing left margin of the cervix. The uncut bridge of vaginal wall is now grasped firmly with hemostatic forceps and divided close to the cervix. It is then pushed up from the cervix to near where the uterine artery is located. If preferred, the artery may be exposed. This is a needless loss of time and might result in copious hemorrhage. When one is sure they are near location of artery, which may be felt by relaxing on tissues, a lateral curved

aneurysm needle or curved ligature carrier with blunt point, armed with No. 3 chromic catgut, is carried through the tissues from front to back, and after catching the loop of catgut, the carrier is withdrawn, leaving a double ligature in place. This should be 16 inches long, and when divided in the center, after carrier is withdrawn, gives ample length to handle and tie well. One of these strands should be caught by both ends with the two hands and looped over ends of both forefingers close to the tissue to be tied, pushed well out into the tissue away from the cervix, then tied with three knots. The second strand is tied nearer the uterus, both ligatures being drawn tight as they will bear. This bridge of tissue is cut close to cervix, dividing the uterine artery; a hemostat is placed on the ends of both these ligatures and dropped. The cervix is now drawn to the left and the right uterine artery with the lower part of broad ligament is tied and cut as on the left. The division of this tissue frees the uterus to a remarkable degree, so that it may be drawn down when the placing of the upper ligatures may be readily done.

If there is tumor of one ovary or a fibroid nodule on the uterus, tie the upper portion of the broad ligament on the opposite side first, tying close to uterus primarily, and before cutting apply clamps below the ligature and cut between this and uterus. So that if traction is required it may be made with the forceps later rather than with the ligatures, for fear of displacing them. After the attachments are completely divided on one side then the uterus is pulled down by the forceps in the cervix and to the attached side, allowing the fundus to be drawn into and through the vagina, giving easy access to the opposite side, which is important if there should be a tumor on that side. This is now tied off and the uterus cut loose. This leaves a large space through which the ovaries may be dealt with as seems proper to the operator, either doing pan-hysterectomy or resecting the ovaries if cystic, and it is advisable from the age of the patient to leave some ovarian tissue. A broad, long

anterior speculum with increased Trendelenburg position may be needed.

After the work has been completed a pair of forceps is placed on the vesical and another on the rectal reflection of the peritoneum. The pelvic cavity is carefully freed from blood with gauze mats held in forceps. The stumps of upper portion of broad and round ligaments are drawn well down by gentle traction on ligaments which had been left long for that purpose. With a ten-day No. 1 chromic catgut on full curved round needle the two layers of peritoneum are closed off by running sutures, the ends of the stumps referred to are caught and tied with this suture at the respective sides of the wound. Then a similar needle armed with No. 2 or 3 chromic gut is used to close off vaginal opening. The first suture is taken so as to embrace the small vaginal strip held in forceps that was at first left uncut on side of cervix. The stump of uterine artery is now drawn down with the end of upper stump of ovarian artery and round ligament and the needle made to transfix them after passing through posterior vaginal wall, before passing out through anterior vaginal wall, that is in the following order—through posterior vaginal wall, stump of lower and upper portion of broad ligament and anterior vaginal wall. This is tied securely and a running suture continued for a few stitches to near the median line, when it is tied and cut. Then the opposite side is treated in a similar manner, leaving an open space in the middle of the vaginal flaps, where the original forceps have been left to mark the point and steady the tissues while a strip of gauze is gently packed in the space originally occupied by the cervix. The ligatures and sutures are cut close and the vagina packed moderately firm with gauze to support the bladder and vaginal canal. This is not disturbed for five days, when both strips of gauze are entirely removed. If the vaginal outlet is relaxed the peritoneum should be closed by repair rather closely. The best method is to make cut around posterior margin of vaginal outlet, as in the Tait operation for repair of laceration. The vag-

inal wall should be lifted entire from rectal wall for at least two inches upward and laterally sufficiently to expose divided edges of levator-ani muscle and transverse fascia and muscles of perineum. This should be closed with No. 1 ten-day chromic catgut by buried layer sutures, making gentle traction on vaginal wall or flap until wound is closed within one inch of vaginal outlet.

The remainder of the wound is closed with silk-worm gut beginning posterior near the anus, taking the stitches well out to sides in the deep structures. The upper or last stitch should resemble the crown suture used in the Emmet operation. In placing the buried sutures care should be taken to catch at intervals the rectal wall on one side and the vaginal wall on the other, but not in the grasp of the same suture. This anchors their tissues and controls the bleeding. All drainage should be dispensed with here.

If this repair is required, place the drain in upper wound as directed and leave vaginal packing out until the peritoneal repair is completed, when it should be applied and left as before.

The urine should be drawn for three or four days, the bowels moved the second or third day, and constipation should be avoided throughout convalescence. After the fifth day, when all the packing is out, a douche should be given twice daily until the stumps with their ligatures slough and come away. This keeps the odor down and makes the patient more comfortable.

The silk-worm gut suture in the perineum should be removed on the fourth or fifth day to guard against possible infection of buried sutures, an accident that has never occurred in my work.

With the technique described there is a perfect peritoneal closure, hence no adhesions.

The cervix being grasped with the large forceps is continuously brought down, and at no time is it turned back into the pelvic cavity with the danger of leakage and infection, especially to be feared in cervical carcinoma.

With very little pain. The pain of the

perineal wound when this is repaired is always greater than from the hysterectomy.

There is only a small amount of tissue to slough and come away, and that is in the vagina.

There is no after treatment that causes pain. The patient can turn without pain in a few hours, and can be up if need be in ten to fourteen days, and does not have a prolonged convalescence usually seen in this class of cases in the abdominal operations.

Where vaginal celiotomy is applicable in pelvic work it is certainly far superior to the abdominal approach to these structures, and really has a wide field of usefulness not referred to in this paper aside from hysterectomy.

The time required is from forty to sixty minutes. My longest time for both operations sixty-five minutes, the shortest for pan-hysterectomy thirty-five minutes.

DISCUSSION.

Dr. G. B. Gillespie, Covington: Dr. Gaines has presented to us a very interesting paper and he has described the technic of the operation very clearly. In a great many cases it is better to perform vaginal hysterectomy, although I prefer abdominal hysterectomy in most cases; but where the case is suitable, the operation is much more quickly done by vaginal route; it is accompanied with less pain. Dr. Gaines has described very clearly the operation, and as he said, he is careful about applying forceps to hold the artery.

Dr. C. N. Cowden, Nashville: The steps of the operation as outlined by the author of this paper we have all used to a more or less extent up to the time we begin to close the peritoneum. Instead of stitching the round ligaments and the stumps of the broad ligament together, first, it is my habit to close the peritoneal cavity. I pull them down well and take up the surface over the tube, and bring up the right or left angle, and with a running suture close the peritoneal cavity entirely. From that time on the work is entirely extra-peritoneal, and it does not matter whether you get infection or not. You close the peritoneal cavity entirely, so that you seal it off, and there is no danger of soiling the peritoneal cavity. Instead of using forceps, I find a great deal more room by tying my ligature and applying forceps to the ligature. You are working in too small a space high up in the pelvic cavity, especially when you are taking off the ovarian arteries, and by cutting the ligatures long, three or four inches, where they hang down outside the vulva, they are not in the way as a forceps would be. After you close the peritoneal cavity, bring the parts together just as you would do in a supravaginal hys-

terectomy, and stitch them and close loosely the vaginal wall completing the operation. I do not pack the vagina, but keep a self-retaining catheter in the bladder for the first forty-eight hours, and I find that relieves the patient more than anything else, because the slightest movement on the part of the bladder will be a drag for the suture and sometimes produce pain, but with a self-retaining catheter you obviate that altogether. It is a beautiful operation and one that is attended with a minimum amount of shock and is the one which should be applied in all cases of extreme old age, because you avoid shock which we get from the handling of the intestines and opening by the abdominal route, and we find it more applicable in these cases than the abdominal route. It has a wide field of usefulness, and it should be performed oftener than it is by a great many surgeons.

Dr. W. D. Sumpter, Nashville: There is no doubt that the technic that has been described by Dr. Gaines for performing hysterectomy is based on sound surgical principles, that the method is ideal and that he gets the favorable results he claims for this particular method, and I do not see any improvement in other technics over it. Years ago, when vaginal hysterectomy was advocated by Pryor and radically used he set all the satellities around him to performing the operation on everything and anything that appeared. I had the privilege of humbly assisting in some of that work and saw occasionally an abdomen opened while a vaginal hysterectomy was being done. I do not know that it occurs in the hands of every man, but at that time the technic possibly was not as perfect as it is today. We know that there are certain conditions that ought not to be attacked by the vaginal route. With adhesions, with the ovaries bound down, where we have to shell out an ovary and have bleeding from the lateral walls, from some of the branches of the internal iliac, we have difficulty in managing them. The surgeon who tries to deal with such conditions through the vagina will find it difficult. I know something about the difficulty of operating on such cases by the vaginal route, even when the structures are in sight, but I do think in selecting cases with proper care the vaginal method is right, and I agree with Dr. Cowden that there are many instances in which it should be used, but not as a routine practice.

The paper presented by Dr. Gaines is timely. Any of us can feel that the technic he has described is amply sufficient for the operation, and we should in appropriate and selected cases employ this method.

Dr. Gaines (closing): In my paper I distinctly stated and feel that this type of operation should be limited to selected cases, and while there are several men in the profession who are enthusiastic over the vaginal method of approach to the pelvis for the relief of pathological conditions, and while any non-adherent fibroid tumor of any size can by morcellation be removed by a long and tedious operation without shock, that does not seem to me to be an exactly rational procedure. One's technic in the removal of

the uterus and in dealing with the pelvic organs will soon inspire confidence, so that it becomes as easy as by the addominal method.

Dr. Sumpter suggested that we should select these cases in which there are no adhesions. The principal reason for that is not on account of hemorrhage, but where there are adhesions to the intestines, we leave raw areas from which the peritoneum is removed which we cannot repair. We are leaving intestinal injuries which should not be left.

So far as the use of this procedure in uncomplicated cases is concerned, it is ideal. I have used the method not only in this particular field of work, but in one case especially of a fat woman with an acute tubal trouble. I adopted the vaginal route, removed the tube and ovary by that means, feeling I would have much difficulty by the abdominal route, but as I stated I was very careful to prepare the abdomen in that case, and it should be done in every case where the vaginal method is resorted to, as there may be complications which will make it necessary to open the abdomen.

REPORT OF A CASE OF OBLIQUE INGUINAL HERNIA COMPLICATED BY AN UNUSUAL CONDITION OF ARTERIO-VENOUS ANEURISM.*

BY DUNCAN EVE, M.D., NASHVILLE, TENN.

Mr. L. M. R., age 40, an engineer on the Louisville & Nashville Railroad, was sent us on November 23, 1910, suffering with a severe sprain of his left ankle, for which we used the usual treatment—Gibney's dressing. He made a satisfactory recovery of the sprain, but during the time we were treating him for this trouble our attention was called to an acquired oblique inguinal hernia on the left side that he had suffered with for several years and was very troublesome, it being difficult to prevent "pushing out" or descending down the inguinal canal. Examination revealed the fact that he was wearing a hard rubber, spring truss, that from the long and continuous firm pressure of the hard pad there was quite an indentation much deeper and redder than ordinarily observed on persons that wore the same kind of an appliance. However, we did not for an instant conclude there was any complication, and to all appearances it was like similar cases, except the opening at the

internal ring was quite large. When the patient would stand without the truss the intestine would descend with a gurgling sound through the canal into the scrotum, and without any great effort, could easily be reduced while in the same standing position.

Mr. R. was anxious for a radical-cure operation, for he claimed it was with some difficulty his truss kept the hernia reduced, and, too, being an engineer, the risk of strangulation was extra hazardous. We therefore admitted him to our infirmary and made preparation for the operation, which was done on December 15, 1910. With the assistance of my brother, my son and Dr. C. F. Anderson, we performed the Bassini operation and found nothing unusual except, as stated, a very large opening at the internal inguinal ring, and I may add many small and superficial vessels required to be ligated. We used six No. 4, or thirty-day chromicized catgut for the deep stitches, one of which was placed above the cord in the upper portion of the pillars of the internal ring; approximated the deeper structures in this manner to the shelving portion of Poupart's ligament under the cord, then brought the reflected aponeurosis of the external oblique as a covering over the cord by a continuous suture of smaller catgut, and finally closed the integument by interrupted stitches.

The hernial sac was isolated from the cord and its vessels with our fingers, no cutting instrument, not even scissors, was used after the aponeurosis of the external oblique was divided, and no adhesions that could not be overcome by manipulation of the fingers was encountered. The hemorrhage, that might be considered unusual, was entirely superficial. There was nothing absolutely abnormal that was noticed. Of course it goes without saying had we suspected unusual pathology anywhere, even remote, in the area or field of the operation, we would have made a more scrutinizing examination.

As soon as the operation was completed a pad of sterile gauze was placed over the wound, a spica bandage applied and the pa-

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tient placed in bed. He made an uninterrupted recovery, the wound healed kindly and he was allowed, with the precaution of a light compress and spica bandage, to get out of bed on the 29th of December, fourteen days after the operation, and removed to his residence, which was just across the street from our infirmary, on January 2, eighteen days after the operation. He was advised to make his movements slowly and not to be on his feet or walk to any extent.

On the night of January 6, Mr. R.'s wife telephoned us that the bandage was stained with blood, about the size of a silver dollar, and we advised that he go to bed, keep quiet and report any further evidence of hemorrhage. Later in the night a considerable bleeding occurred, and when called, my son responded and found while the bleeding had suddenly or spontaneously ceased, the bandage that was still worn was fully saturated with blood. It was removed and a clean one applied with a larger compress. A short time later I made an examination and found the upper angle of the seemingly healed wound had ruptured to the extent of about a half inch; a pair of hemostatic forceps was introduced at this point and the blades opened so that an inspection might be made, but unfortunately no evidence of a bleeding vessel was found, and we reapplied the dressing to await developments. There was some evidence of constitutional symptoms of the loss of blood. The only cause given by Mr. R. that he attributed the bleeding to was laughing heartily at something one of his children had done.

We were nonplussed for two convincing reasons; first, the very late date of the hemorrhage and, secondly, the absence of infection. Another hemorrhage occurred the next day (January 7), more copious than the one the day before, and again of its own accord ceased quite suddenly before the bandage could be removed or means employed to arrest same. The constitutional impression was more profound than the former bleeding. Appreciating the gravity of the situation we requested Mr. R. to allow us to take him back to the infirmary, which he readily consented to, and

under cocain anesthesia we cut open the original wound down to the deep structures, and except at the internal ring for the transmission of the cord, the deep muscles were firmly united to the shelving portion of Poupart's ligament, therefore we did not interfere with this union, for there was so far as we could then determine, no evidence of blood coming from below. It occurred that it might be the deep epigastric artery, so we made a dissection and became satisfied after freeing this vessel, it was not responsible in the least for the trouble. It seemed all we could do was to pack with iodoform gauze and use firmer pressure. Our patient reacted quickly and spent a fairly good night, and did quite well for two days, when on January 9, in attempting to relieve the tightness of the spica bandage, another hemorrhage took place, and like at his home, before we could finish removing the dressing, it ceased spontaneously like the others.

Knowing that some unusual condition confronted our former efforts in failing to determine the source of these hemorrhages, and, too, satisfied that desperate means had now to be employed, we telephoned his family physician, Dr. J. A. Gaines, and after consulting with him and others, we determined to make another or third attempt to find out the cause of the hemorrhage, if possible. All preparations being in readiness, the patient was moved to the operating table, Dr. C. F. Anderson administered ether, and with the assistance of Dr. Gaines and my son, and in the presence of several invited gentlemen, we opened up the deeper structures, not only the area of the former hernia operation, but the structures immediately adjacent thereto, and soon found out the cause, for in dissecting up the deep muscles which had united (although the catgut stitches were not absorbed), the blood spurted and it required firm and continuous digital compression to control the bleeding from the now exposed iliac vessels. In the attempt to free the large artery it was found attached on the inner side to its accompanying external iliac vein, and we also noticed that both the artery and

vein were greatly distended. Ligation of the artery on the cardiac side of its supposed rupture did not control the hemorrhage, therefore the vein was also ligated above and below its attachment to the artery, and only after this last procedure was it certain that the hemorrhage was at last under control. From the union as well as dilated condition of both external iliac artery and vein, *we at once determined the condition was an arterio-venous aneurism*, the pathology, however, could not be investigated as we would have liked, for we were anxious to get the patient off the table, therefore hurried in every way to do as little as possible; however, we did determine (the catgut not being absorbed) that none of the stitches were through or into the walls of the external iliac artery or vein. The patient reacted despite his many hemorrhages. The limb was kept elevated, banded and artificial heat applied, while the limb became slightly edematous due to the collateral circulation, it never became cold or showed any indications of gangrene. The patient did quite well for the first three or four days, but with all the saline transfusions and what else that was done, he showed unmistakable evidence of dissolution, and died on January 15, just one month from the time of the hernia operation.

There are some interesting questions the report of this case brings up, the centering one is, what produced the arterio-venous aneurism? *Facts show positive evidence that it was not produced by the hernia operation for reasons already assigned.* Then how did it occur? Let us see. It will be remembered that an arterio-venous aneurism includes two forms of aneurismal dilatation of an artery communicating with a vein, known respectively as varicose aneurism and aneurismal varix. In aneurismal varix there is no aneurismal sac—adhesions have occurred between the artery and the vein at the point at which they communicate, and the blood is projected directly from the artery into the vein at each pulsation.

Holmes' System of Surgery, revised by Packard, states: "Both varicose aneurism

and aneurismal varix may originate spontaneously, though they are commonly the result of an injury, in which the artery and vein have *both* been wounded. In spontaneous arterio-venous aneurism the communication with the vein apparently follows upon the development of a simple arterial aneurism in the contiguity of the vein. When an aneurism is found on a large artery, in such a part of the artery as to compress a neighboring vein, it is common to find that the vein is obliterated. But occasionally, in lieu of affecting a closure of the venous channel, the pressure of the aneurismal pouch of the artery gives rise to absorptive ulceration of the coats of the vein, and the sac opens either by rupture or by ulceration into the vein."

According to Delbet, about 6 per cent of arterio-venous aneurism arise spontaneously.

The American Practice of Surgery, Vol. 7, page 294, states that "Aneurismal varix may exist for years in a satisfactory condition, but the disturbances consequent upon the circulatory changes are as great as in varicose aneurism. In a few cases, however, the vein becomes so greatly distended as to rupture."

Bransby Cooper, in Guy's Hospital Reports, Vol. 5, reports a spontaneous case of arterio-venous aneurism of the external iliac artery and vein.

J. C. Perry, in the Med. Chirurg. Transactions, Vol. 20, reports a spontaneous case of arterio-venous aneurism of the femoral artery and vein.

Potter, in Todd's Cyclop., on Arteries, reports a case of arterio-venous aneurism affecting the femoral vessels, in which the cause could not be traced to any penetrating injury.

In the Med. Chirurg. Trans., Vol. 44, page 189, Mr. Pemberton reports a case of arterio-venous aneurism found in the groin ten months after prolonged instrumental pressure had been made at that point in a successful attempt to cure a popliteal aneurism.

Gross mentions the external iliac as one of the arteries most frequently developing arterio-venous aneurism.

In Holmes' System of Surgery an interesting case is presented by Mr. Beaumont, of Toronto, Canada, of an arterio-venous aneurism of the external iliac artery and vein that had existed for twelve years and supposed to have formed as the result of horseback riding, and where the usual signs of the aneurism were absent.

Drs. Le Conte and Stewart, in the *Amer. Practice of Surgery*, Vol. 7, page 291, claims that the hemorrhage due to a rupture of an arterio-venous aneurism, most usually ceases spontaneously.

More data could be quoted or reported on this interesting subject, but we believe we have introduced enough to take the position that Mr. R.'s arterio-venous aneurism was a spontaneous one, or perhaps produced by pressure from his hard-pad truss, and, further, there were no well defined or definite symptoms manifesting the aneurism.

This is the only case I ever lost for a radical cure hernia operation, and I think the members of the Society will agree with me it should not be charged, *per se*, to the operation for the hernia.

DISCUSSION.

Dr. Cooper Holtzclaw, Chattanooga: The doctor has covered the ground so thoroughly and completely that there is very little to be said: He has reported one of those rare cases that we run across occasionally—one of those cases that you see when you have not got a gun. (Laughter.) There is absolutely no method I know of from his report of that case whereby this condition could have been anticipated and stopped. Under the circumstances it was perfectly right and natural that an anastomosis should be made between the artery and vein, and by right there should have been some trouble below, but there was none. The patient was an active man, an engineer, and certainly would have noticed in his arduous duties some pathological condition in the leg below had it existed. I agree with Dr. Eve that this was spontaneous. I am very much inclined to think that it was produced by the intermittent rubbing of this hard truss, and that it produced a diseased condition of the walls of the blood vessels. After the operation, the pressure being taken off, the blood vessels simply dilated, and ruptured. The only criticism that could be made is, that at the first hemorrhage he should have gone down and investigated to the fullest extent. That, of course, brings up the old question of hindsight and foresight, and we do not know which is best sometimes. We do at the time and under the circumstances what our best judgment dictates in all cases.

Had Dr. Eve at the first hemorrhage operated at once, what would have happened? The only thing to do was to tie off artery and vein on finding the anastomosis and risk the chance of life to the limb and death from sepsis or amputation at hip joint, which would have been refused by patient, or if done, would under the circumstances have been followed by death.

With the knowledge and information of the case so elaborated we cannot but otherwise exonerate Dr. Eve's procedures, and we think he has no right to exculpate him completely.

Dr. Deering J. Roberts, Nashville: I rise to commend Dr. Eve on the report of this very interesting case. He is following in the footsteps of his very harbor any compunction of conscience. Therefore we eminent father in reporting a case of what would be regarded as a failure or unsuccessful operation. It is by reporting failures that we gain knowledge for the future. The case he had in hand was one that gave him much thought quite sufficient to tax to the utmost the ablest and most experienced in a surgical capacity. When the general practitioner is called upon to make a diagnosis of these surgical conditions, involving the deeper seated vessels and tissues, rational symptoms and physical signs may be vague, indefinite or even wanting, and all of the forms of aneurism, especially those involving the deeper-seated parts, I know of nothing more difficult to diagnose early than those which take on the form of aneurismal varix or varicose aneurism, or aneurism by anastomosis. Aneurisms of this character as he has shown so plainly by his citation of unquestioned authorities, are often the result of traumatism as well as diseased arteries from other causes. Here we have had a condition for months preceding the development of this trouble of a semi-traumatism, the severe and continued pressure of the hard pad of a truss which was enough to produce a more or less diseased condition of the two adjacent vessels. In venturing an opinion upon this case I feel convinced from the graphic delineation of it from beginning to end, that this was an aneurism preceding the operation for hernia, it being one of those unfortunate cases that the surgeon now and then runs up against. It is one of those cases where destiny shapes our ends—rough hew them as we may. Dr. Eve is to be congratulated on having the courage of boldly presenting this case for the benefit of the profession.

Dr. John A. Gaines, Nashville: I do not feel that Dr. Eve's position in regard to this case needs any defense. I was interested in the case before the operation and after it. The patient, after consulting me in regard to the matter some weeks before had postponed the operation at that time. He was in Dr. Eve's infirmary with trouble with his ankle and decided wisely to have an operation at Dr. Eve's hands. I make this statement for the reason that when I was consulted previously, some six weeks before operation, I made an examination, and there was no evidence whatever of any local condition which would

lead any surgeon to suspect any complications. I do not believe there was any discernible complication present at that time.

In discussing the question of what was found, Dr. Eve has given that clearly and completely, and there are some things that are of special interest in regard to this case. In the first place, the absence of any evidence of this condition in the circulatory system in the lower limbs; there was no evidence whatever of interference with the circulation or enlarged vessels which could be detected at the examination. As to the occurrence of this complication after the removal of the truss or after the operation, I have thought very much of the case. I believe the condition as described by Dr. Eve is well taken, because I made a dissection of the vessels at the time of the operation, as Dr. Eve asked me to do so. There was no evidence of injury from the operative procedure at the time, and I am unable to explain why there should not have been some circulatory disturbance from the anastomosis between the vein and artery. That was due to the fact that the part was grasped by the pressure of the truss and supported by the truss while it was worn. After the removal of the pressure, or after the direct contact of this hard truss was removed, the pressure was relieved, the vessel wall had been diseased, and an acute condition coming on at the time. Dr. Eve failed to suggest one thing, and that is, after the operation there was almost continuous pain in the limb.

Dr. Eve: That is true.

Dr. Gaines: Almost immediately on recovering from the anesthesia the patient complained of considerable pain in the limb, which was due to acute dilatation of the vessel at that point, and I think rupture took place.

Another interesting feature, at the second operation, when the external iliac artery was ligated, and the external iliac vein ligated above and below at this point, securing the two definitely, there should have been no marked ischemia. I saw this patient after the operation daily, and we operated about the middle of the day, between eleven and twelve o'clock. As a further support of the suggestion that the truss produced unusual circulatory disturbance in the anterior part of the limb, anastomosis had formed around this point, and there was sufficient circulation established to prevent gangrene or marked ischemia of the limb. That is one reason why this hemorrhage would so readily control itself or automatically stop, because the pressure was largely relieved in these vessels by the posterior collateral circulation.

Dr. Eve is to be commended for reporting this case. I narrowly escaped operating on this case myself, and I wish to thank Dr. Eve for taking this off my hands.

LACERATIONS OF THE DEEP URETHRA.*

BY J. J. WALLER, M.D., OLIVER SPRINGS, TENN.

Mr. President and Members of the Medical Association of Tennessee.

The frequency and often the mystery associated with the productive causes in this class of cases is the excuse I have for this paper. In perusing the books and literature on this subject I find that many of them pass this subject by in a mere cursory way or deal with it in a manner not altogether satisfactory.

By the deep urethra I mean the membranous and bulbous portions, anatomically speaking, or that portion from the symphysis pubis to the prostate gland. In this subject I do not include contusions which do not sever the walls of the canal, but only that class of cases in which the canal is cut in two or partly so. All lesions external or internal which destroy any part of the deep urethra and leave an opening into the surrounding cellular tissues into which the urine or blood may enter and extravasate sufficiently define the caption of this article to make its meaning clear. Of course, in this class of cases there are other lesions, either causative or associated, which must be taken into consideration, but the subject in hand will stand out paramount in the field of pathology and guide the proper treatment.

The pathology of this class of troubles is invariably dependent on some kind of traumatism. Aside from that which may be caused by rough intra-urethral instrumentation, the causes may be divided into two classes—subcutaneous and those producing an external opening through the skin or rectum. Stabs, cuts and missiles of various kinds generally enter from the outside, while other causes may operate in another way and lacerate the urethra by fracture of the pelvic bones or through the soft parts. Those caused by external wounds are easily understood, as the etiology is plain, but those blind injuries are often

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veiled in so much mystery as to just how they are caused that they become of great interest and importance.

Kaufman's statistics on 200 cases shows the causes to be as follows: Falling astride some narrow body, 80 per cent; perineal blows, 12 per cent; being run over by vehicles, 4 per cent, and on pommel of saddles, 4 per cent. This general classification and percentage can only indicate in a general way the *modus operandi* in producing these lesions. In railway surgery it is very common to have cases of urethral injury in connection with that class of cases of pelvic fracture produced by being caught and mashed between cars while making a coupling. In mining surgery practically the same lesion is produced by being knocked down and crushed by falling slate. Often the external appearances are such that one would not suspect any kind of internal injury, as the skin may not be broken and no contusions visible, but the urethra is injured all right enough. If there is fracture of the pelvic bones or visible contusion of the soft structures in the perineum, the manner of producing the injury may be easily made out, but if the fracture or contusion cannot be made out and located—yet the urethra is torn—the case necessarily becomes very mysterious; and such we find to be the condition in a percentage of this class of cases. The cause leads almost imperceptibly into the pathology in this class of cases. The subpubic portion of the urethra is closely adherent and held to the pubic bone by the triangular ligament, so that a fracture of the pubic rami would necessarily disturb the urethra; a fracture or dislocation (should such occur) would injure the urethra by a scissor or sheep-shear arrangement. Possibly it might do it by bringing the two lateral wings of the triangular ligament closer together and causing its internal margins to cut the urethra. Even though it should not cut or crush it in two, both ends being secure—one to the pubes, the other to the prostate—it is possible and more than probable that the taut urethra can be torn away from its prostatic portion, thus producing the laceration

at a distance from where the force is applied. This displacement of bones or ligaments may serve to lacerate the deep urethra, then instantly fall back to their original position and render it almost impossible to know just how the urethra was torn. It is not easy in all cases to make out a fracture or dislocation. The canal may be wholly severed or only in part; the lower or upper wall may remain intact. The rent may be transverse, oblique, or longitudinal; it may be crushed (pulped) for some distance together with the surrounding tissues. When completely severed, the proximal and distal ends of the urethra may retract and separate from one-half to three-fourths of an inch. Blood will extravasate in the tissues to a greater or less extent. Urine may likewise do so, if the proximal end is not sealed by crushing.

The symptoms are first that of an injury affecting that region. There is more or less shock. In case there are no visible skin injuries but general complaint through the pelvis do not hastily conclude there is nothing serious. The trouble may be masked. After a few hours of general suffering there may be inability to void the urine, and on observation there may be more or less blood oozing from the meatus; the perineum may be becoming purple or turning black from extravasation of blood or blood and urine. The desire to urinate is becoming great and very painful. The introduction of a catheter may be difficult or impossible, especially so if the urethra is completely severed.

The diagnosis is made by the history of a pelvic injury, the shock, the suffering through pelvis, inability to void urine, bleeding from urethra, ecchymosis in the region of perineum, groin and scrotum, and impossibility or difficulty in passing catheter.

The prognosis of this class of cases is generally good, so far as life is concerned, but even then it should be guarded. It is impossible to know what the destruction of tissue and ecchymosis together with the extravasation of urine may result in. Extensive sloughing may take place about the perineum, groin, scrotum, or even in the

hypogastric region, leading to cicatricial contraction and destruction of parts; pelvic abscess may result as the infiltration burrows up beside the bladder. Urethral stricture is most common and is to be anticipated and prevented if possible. With extensive sloughing and infiltration the danger of sepsis is great. Destruction of the ducts and loss of the procreative powers is among the consequences; even manhood may be sacrificed. In short, life may be lost in septicaemia or any one or more of the sequelae mentioned above may occur; life may be saved, and the results may be surprising.

Treatment—Always suspect possible lesion of the urethra in case of pelvic or perineal injury, though there may be no visible signs of anything serious. Do not wait long till any suspicion is verified or cleared up. If it is impossible to void the urine, then a gentle attempt is made to introduce a catheter, being careful not to use violence and make any lesion worse. If the urethra is not completely severed, it may be possible to catheterize; but, if it is completely severed, the chances are that it will be impossible to introduce a catheter. Then a decisive action must be taken. Do not wait for urinary infiltration, but operate as soon as possible, for delay is dangerous. Introduce a guide and cut through the perineum to its point; see what is the condition and act accordingly. If the urethral wound is clean-cut and can be stitched, that is the proper thing to do. But first introduce a rubber catheter the entire length of the urethra into the bladder and stitch the canal over it, taking care if possible to not catch up the mucosa. The perineal wound should be packed with gauze and not closed, unless it is very large, then it may be lessened by a stitch or two at either end. The catheter should remain in four or five days, then be removed and a sound introduced occasionally to keep open the canal.

If the canal is completely cut and both ends retracted, the above procedure is not so feasible. Getting hold of the ends is very difficult, and, should the ends be secured, it is then most difficult to make an end to end anastomosis. Such might be attempted,

if the wound is clean cut. If the two ends of the urethra cannot be recognized and secured by observing the opening or the mucosa, then the open wound method is to be adopted or do a suprapubic cystotomy and introduce a catheter or sound in a recurrent way to locate the proximal end. Then it may be secured as before. Unfortunately there is generally too much contusion of the parts to permit such fancy work. Again, one who has never tried it will find there is blood in galore. If the urethra is crushed so as to make it impracticable to unite it, then the open method of drainage through the perineum is about all left us to do, taking chances on preserving a urinary canal by sounds for a long time afterwards.

The perineal cut answers for two purposes—to open a field for operation and to drain the engorged and infiltrated tissues. If the infiltration is extensive, more openings may have to be made for drainage. The object is first to save the life of the patient, second to restore the urethra to its useful function. Along with all operative procedures a urinary antiseptic should be administered, such as urotropin. In some of these cases it is surprising the degree of restoration which takes place after the most extensive and destructive sloughing.

Bear with me in reporting the following case: C. E., age 28 years, was injured on the 17th of Feb., 1910, by falling slate. I saw him two hours later and found him suffering in his left groin, through his hips and along the line of the left sacro-iliac synchondrosis; shock only moderate. No visible external injuries. He was reported to have fallen rather on his right side and the slate on top of him. He was able to walk a few steps after he was taken out of the mine, then was carried home. No bleeding was observed, but he was very sore on being handled. His general appearance was that of a man pretty badly hurt. I suspected some internal injury, but could not define or locate it.

I resolved to await the development of indicative signs and symptoms, but expressed a fear that the bladder might be injured, which, if true, would reveal itself

in a few hours. Sure enough, after several hours, I was again called to relieve a distended bladder and its consequent misery. Then it was I struck the real trouble. It was a difficult job to introduce a catheter; finally it entered the bladder, and about one quart of urine was removed, 25 per cent being blood. He was unable afterwards to void it, so he was taken to the infirmary for treatment. Within a few hours the perineum, scrotum and peri-anal tissues were very much ecchymosed. For fifteen days the catheter was used four times a day, there being very little blood after the first drawing. Evidently in this case the membranous urethra was lacerated on the dorsal aspect, for in introducing the catheter the point had a tendency to escape above into the pre-vesical space. Then much blood would escape; the shelving edge of the posterior aspect of the rent could be felt, under which the point of the catheter being tilted would enter the bladder. In seventeen days he left the hospital, able to void his urine very well.

On August 6 I was called nine miles away to see him again. This time it was extravasation of urine into the cellular tissues of the perineum, scrotum, groin, hypogastric region to a level with the umbilicus, and also in the pelvic tissues. His condition was dreadful. Again he was taken to the infirmary where he was operated on and came very nearly dying from the anaesthetic. I forced a small metal catheter into the bladder and cut down on it through the perineum, thus making a direct opening into the bladder. This gave drainage to the pelvic structures. On the left side of the perineum, up the left groin, and in left inguinal region the sloughing was extensive; also about the deep urethra and the left lobe of the prostate sloughed away. For a long time the urine drained through the perineum, finally it began to follow the natural channel. The perineal wound gradually closed. On last examination the canal would take a No. 28 (French) sound, but on reaching the prostatic urethra it would invariably turn towards left at an angle of about 90 degrees. When last seen his

appearance was fine. In this case I am informed his procreative apparatus is out of business permanently, both in effect and desire.

I have never been satisfied as to just how this injury was produced, as no fracture could be made out by external palpation and manipulation and by intra-pelvic exploration through the rectum. The very perceptible soreness along the left sacro-iliac synchondrosis bore evidence of a diastasis, of the left sacro-iliac joint, all structures immediately returning to their normal positions when the weight was taken off. Hence the mystery of these cases.

Evidently the rent first produced in the urethra did not heal sufficiently, and the cicatricial contraction produced a stricture so the vis a tergo of the urine forced the weak tube behind the stricture to give way, thus opening the canal for extravasation and infiltration. This remote consequence is sufficient to teach the important lesson of occasional sounding for two or three years in order to prevent closure of the canal and assure a better result, which are generally bad at the best.

ARTERIO-SCLEROSIS.*

BY W. J. MATTHEWS, M.D.,
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According to Osler, "the tragedies of life are largely arterial," and "primarily or secondarily, death comes to the majority of men through some disease or degeneration of the arteries."

Arterio-sclerosis, the most important condition of this class, is a general degeneration of the arteries, characterized in the small arteries by a thickening of all the coats, and in the larger vessels by gelatinous swelling, fatty degeneration, necrosis and calcification, the process being called atheroma. The condition of thickening of the internal coat of the arteries may be diffuse or circumscribed. The condition is though by Thoma and others to be a compensatory process which is secondary to,

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and follows, some disease or degeneration of the middle or outer coats of the arteries.

Two forms of the degenerative process are recognized: the circumscribed and the diffuse. Normally the inner surface of the arteries presents a smooth appearance. In the circumscribed form of degeneration localized areas of thickening are seen on the inner surface, which may be hemispheric in outline, yellowish white in color, and which are more frequent at or near the arterial branches. The microscope demonstrates localized areas of thickening in the middle and outer coats, which are in reality the primary changes. Nature's effort seems to be to compensate this weakness in the middle coat by the formation of thickened patches of connective tissue, and calcareous deposits in the more advanced stages.

In the diffuse form the changes are more generally distributed throughout the arterial system; the deposit of connective tissue, calcareous deposits and necrotic degenerations are more extensive, especially in the internal coat and in the senile or well advanced cases. There may be associated atrophy of the heart, liver or kidneys on account of the diminished blood supply in consequence of narrowing of the vessels; more commonly, however, the heart becomes hypertrophied on account of the increase of blood pressure and the consequent increased amount of work required to propel the blood stream.

The causes of arterio-sclerosis are many; as an involution process it is an accompaniment of old age. It is not always present, but when present, as it usually is, it may be more due to the fact that conditions causing increased blood pressure have been present a long time, and is an expression of natural bodily wear and tear. Among the organs of the body the blood vessels alone have no rest. Like other organs, they live under three great laws: first, use maintains and in a measure sustains structure; second, over-use leads to degeneration; and, third, in time they grow old, the limit of their endurance is reached and they wear out.

The stability of arteries depends upon

the quality of elastic and muscular fibres of their coats. Some persons are born with arteries which are naturally less resistant and enduring than others, and they are unable to resist the ceaseless wear and tear of life. At forty they are as near worn out as others at sixty. It is but natural for persons of this class to develop arterio-sclerosis. Much more frequently, however, according to the view of Osler, arterio-sclerosis results from the bad use or abuse of naturally good arteries, especially if it develops in comparative young or middle aged persons.

The conditions of modern civilization favor the development of arterio-sclerosis. Men go at top speed, both mentally and physically. By the time they reach the age of forty or fifty, even with good habits in eating and drinking, the incessant strain and anxiety of public life or business pursuits leads frequently to degeneration of the blood vessels. After forty it is exceptional to examine arteries without some evidence of degeneration. At this time the condition is not usually very marked, but with advancing age the arteries become more thickened and atheromatous changes more marked. Occasionally old persons may have arteries that show few signs of degeneration, but it is comparatively rare. Living a quieter life, with less stress and strain, women are not so frequently the subject of arterial changes, hence they usually last longer.

Of the acute infections that cause arterio-sclerosis, syphilis is the most frequent and important. It is usually the cause of cases that develop in children or younger persons. Scarlet fever, measles, diphtheria, influenza, smallpox, typhoid fever and chronic tuberculosis are all mentioned by authorities as causes of arterial degeneration. Of the poisons, alcohol, lead, tobacco, and to a less extent tea and coffee, are classed as exciting causes.

Conditions which interfere with bodily metabolism, such as gout, diabetes, chronic Bright's disease and obesity act as exciting causes of atheroma. Just how they act is not fully known, but retained toxines prob-

ably act on the blood and the coats of the vessels themselves, causing the degeneration.

Conditions which act to keep up the blood pressure, such as overeating and drinking, are recognized causes of arterio-sclerosis. Excesses in food and drink act in two ways: first, by keeping the blood vessels constantly distended, and, second, by the formation of toxic substances in the process of bodily metabolism.

Arterio-sclerosis is seen in persons who are strictly temperate in every way except at the table. By excesses in food we mean an amount in excess of bodily needs, work done, and excretion and elimination of waste products. It is well known that overeating among all classes is a very common practice.

In no way is the blood pressure more persistently heightened than by the constant excessive use of the muscles. Variations of blood pressure to meet the normal variations between rest and work are to be regarded as physiological, and is not harmful, but it is very severe muscular effort, repeated over prolonged periods of time, that damages the vessels and heart.

To recapitulate, there are three groups of causes of arterio-sclerosis. First, the involuntary, which is caused by the ordinary wear and tear of life, and which is as natural as gray hair or failing eyesight; second, the toxic group, in which the degenerations are caused directly by poisons or acute and chronic infections, and by intoxications; and, third, the group in which the degeneration follows the persistent high arterial tension, caused mainly by excesses in eating, drinking and muscular exertion.

In any given case in a man of fifty or more, one, two or all these factors may be present, and it may be difficult to assign to each their relative value.

The symptoms of arterio-sclerosis are as varied as the organs involved. In so wide spread and important a disease as arterio-sclerosis, the clinical features will depend upon the extent to which the process has involved the arteries of the different organs. So remarkable are the powers of

adaptation in the body, that an extreme degree of arterio-sclerosis may exist with no other sign of disease. It is a frequent experience to find it in persons who look well and who are able to perform the ordinary duties of life. Sudden death may terminate a case of arterio-sclerosis in a person who has shown no symptoms during life; post-mortem showing cerebral hemorrhage, blocking of a coronary artery, acute cardiac dilatation, or rupture of an aneurysm as the cause of death. The condition may be discovered accidentally in a casual examination for life insurance. For years such a patient may have led a busy, active life, his condition being similar to that of a person with a well compensated valvular heart lesion. A person of this class may look healthy and robust, but on closer examination the palpable arteries can be felt to be thickened, the tension is heightened, there is increased vigor of the cardiac impulse, and the second sound at the aorta is accentuated. If such a patient gives a history of having worked hard with his muscles, and of eating and drinking heartily, the condition cannot be mistaken. In a person of forty or younger this condition is serious, although not of immediately dangerous significance. In extreme cases mental and bodily vigor may persist with the most pronounced arterio-sclerosis. The discovery of the condition, though a temporary shock may be the most fortunate thing that could happen to a person with arterio-sclerosis, as it gives him timely warning and an opportunity to change his ways of living and thus prolong life.

The early symptoms of general arterio-sclerosis are pallor, with gradual loss of intellectual and bodily vigor. These symptoms gradually increase, the skin becomes flabby, the peripheral arteries gradually harden and the blood pressure rises. The heart and kidneys are not affected to a marked degree. The condition gradually increases, ability to work and exercise grows less, appetite and digestion fail, emaciation increases, and the patient takes his bed and finally dies from what appears to be a break-down. The rigidity of the ar-

teries interferes with the proper discharge of blood into the capillaries. The clinical symptoms may not be those of a disturbed circulation in a general way, but of diminished or abolished blood supply to some organ, as the brain, the heart, the kidneys, or the extremities; the result being disturbed function or structural alteration. In some cases these changes are plainly apparent, while in others they are obscure and may be misinterpreted altogether.

The involvement of special organs leads to special groups of symptoms, according to the extent and location of the diseased process. Involvement of the coronary arteries may lead to such conditions as thrombosis, aneurysm and angina-pectoris, with special symptoms peculiar to each.

A very important group of symptoms results from the cardiac dillatation which ultimately follows the hypertrophy which is usually present in arterio-sclerosis. Many cases terminate in this way, and if first seen in this stage the doctor may be thrown completely off his guard. The only way to differentiate in such cases is by the previous history.

The cerebral symptoms of arterio-sclerosis are varied and important. Headache, transient vertigo on assuming the erect position, and various manifestations of neurasthenia may be the only early symptoms. In the latter stages, impaired memory and intellection, changing disposition, emaciation and weakness and symptoms of cerebral anaemia, hemiplegia, paraphlegia, monoplegia or aphasia—appearing and disappearing—may occur. According to Romberg, arterio-sclerosis of the cerebral vessels is the most frequent cause of apoplexy.

Osler says that in the absence of syphilis and lead poisoning, epileptic convulsions occurring in persons past middle age should always excite the suspicion of cerebral arterio-sclerosis.

Progressive dementia or gradual failure of the mental powers is one of the most common symptoms of cerebral arterio-sclerosis. Sclerosis of the renal arteries may be secondary to an already existing interstitial nephritis, as a result of dimin-

ished blood supply to the renal capillaries, but in the majority of cases, according to most authorities, it either precedes or accompanies the development of nephritis. The condition first manifests itself by an increased flow of urine, especially at night. The urine at this early period may show nothing more than a lowered specific gravity. When the sclerosis becomes more marked the urine becomes more scanty. In these cases there is likely to be more or less sclerosis of the arteries in other parts, especially in the later stages. This form of disease is more frequent in senile cases.

Symptoms of cardiac insufficiency may co-exist, or in some cases failing heart power and chronic interstitial nephritis are so intimately associated as to make it difficult to tell whether the heart or the kidney is the most seriously involved.

The abdominal symptoms of arterio-sclerosis are not always definite and well marked. Pal and other authorities believe that many of the painful abdominal conditions are associated with changes in the gastric and mesentric vessels. Victims of angina-pectoris may have marked abdominal symptoms which are sometimes spoken of as abdominal angina. The general symptoms present aside from the abdominal symptoms are sufficient upon which to make a diagnosis.

In arterio-sclerosis affecting the peripheral arteries of the extremities, in the earlier stages, there are cramps of the muscles of the legs which are caused by overexertion or a strained position. They often occur in the night and in elderly persons, and numbness, tingling, burning and shooting pains, occur in the more advanced stages. In the terminal stages, following obliteration of the arteries, local areas of ulceration or gangrene may result.

In the diagnosis of arterio-sclerosis many things are to be considered, on account of the varied manifestations, the different structures involved, and the extent to which different parts are affected. The diagnosis of sclerotic changes in the peripheral arteries is a simple matter. But it is far more difficult to detect sclerosis of the ar-

teries of the cranium and abdominal cavity. Here it must be more a matter of inference than of definite and positive demonstration, and must be made by the study of the patient, his history, age and symptoms. To the rule that arterio-sclerosis is general and uniformly distributed throughout the body, there are many exceptions. Wide spread arterio-sclerosis of the peripheral arteries may exist with slight changes, if any, in the aorta, and vice versa. The vessels of the head, heart and the kidneys may be in an advanced stage without involvement of the peripheral arteries. The most serious form of the disease is that in which the smaller vessels are chiefly affected and which comes on in middle life or in young persons.

There is not much to be determined from the general appearance of the patient. Some cases are anaemic looking in the earlier stages, but a florid appearance is the most common. A robust, vigorous looking man in the prime of life may have vessels in an advanced stage of sclerosis. The active vigorous man who at forty-five first learns that something is wrong is generally greatly surprised and shocked. In other cases the condition develops rapidly; after some crisis such as disease, business worry or bereavement, or even without any obvious cause, a man begins to fail, his gait is less elastic and firm, movement becomes less active, there is loss of weight, intellect is impaired, capacity for work and effort lessened, and what we term a general break down occurs. When the degeneration has already occurred, the cardinal symptoms are usually well marked. Thickening of the peripheral vessels, cardiac hypertrophy, heightened blood-pressure and a slight or variable amount of albumen in the urine are present in a large proportion of cases, and when present the diagnosis is complete and the damage is done. This is usually the condition when the patient first consults the doctor. It is a very important matter to recognize the early stages of the process while there is a reasonable chance of arresting the degeneration. We can form a pretty clear opinion of the condition

of the arteries by sight, by touch, by estimating the blood pressure and by a study of the pulse. When at all advanced, the superficial arteries become visible and tortuous, especially the temporals. The condition of the retinal arteries as seen by the ophthalmoscope is of most importance for diagnosis in the earlier stages. By palpation we can judge with a fair degree of accuracy of the degree of thickening, of the blood vessels, the tissues about the artery, the amount of fat in the skin and the size and fullness of the veins must all be considered. Not only the radials and temporals, but all the palpable arteries should be examined.

Palpation should be made first in the natural state, then the artery should be felt below the point where the pulse wave is obliterated, then a small section of the artery should be emptied and palpation made between the two pressure points. Only in this complete way can we learn the condition of the arteries. The character of the pulse is hard and resistant, and the vessel is plainly palpable to the finger during the interval between the beats. The vessel may feel like a small cord, like a tightly drawn whip cord, like a beaded cord, or like a wire under the skin, varying according to the state of degeneration present.

Instruments for measuring the blood pressure in the vessels and for tracing the pulse waves are very helpful in making a diagnosis.

Diagnosis of the special forms of arterio-sclerosis presents difficulties not encountered in the general forms of the disease. In a general way it may be said that rigidity and tortuosity of the temporal arteries, with headaches, vertigo, impaired memory and general symptoms of cerebral anaemia, point strongly to sclerosis of the cerebral arteries. In cases of doubt the ophthalmoscope will give early and reliable information as indicated by tortuosity and throbbing of the retinal vessels.

Diagnosis of the sclerosis of the aorta cannot always be definitely made. It must be made by a study of the cervical vessels, and changes in the size of the heart and by

its sounds. If the carotids are stiff and the subclavians are situated high up in the neck and feel stiff and unyielding, if the left ventricle is hypertrophied and the second aortic sound is ringing and accented, there is probably sclerosis of the arch of the aorta.

The question as to whether there is or is not sclerosis in the region of the splanchnic nerves presents great difficulties.

Stiff radials in a corpulent persons, who complains of dyspnea out of proportion to the amount of exertion, who has no recognizable heart lesions, indicates sclerosis of the deep abdominal vessels. A history of sedentary pursuits, heavy eating, gradually increasing shortness of breath and abdominal corpulence, with slow pulse, with high tension and hypertrophy without dilatation of the heart, point more strongly still to arterio-sclerosis of the abdominal vessels. The differential diagnosis of cases of this class from cardiac insufficiency of the obese (or so-called "fatty heart") is often impossible. As a matter of fact, the two conditions frequently co-exist.

In the obese, however, there is a general distribution of fat throughout the body which is much in excess of what exists when there is only excessive abdominal corpulence with arterio-sclerosis.

Coronary sclerosis may be assumed to exist where angina-pectoris develops in a man past middle age, in whom there is a reasonable evidence of sclerosis of the aorta, with subjective and objective symptoms or incompetence of heart muscle.

Renal arterio-sclerosis may be inferred if, in conjunction with stiff peripheral vessels, there is increased nocturnal flow of urine which is of low specific gravity and contains little or no albumen.

Prognosis of arterio-sclerosis depends upon the degree of the vascular change, and upon the extent and nature of the visceral changes, resulting from them.

The degenerative changes are inherently progressive and incurable. Once degeneration, fibrosis and calcification have taken place, the damage is irreparable. This does not mean that the condition is always hope-

less, as much may be done by the proper treatment to prevent the trouble from occurring and to prevent the sclerosis from increasing, once it has occurred, and also for the relief of symptoms.

This would indicate the line of treatment of arterio-sclerosis, which is prophylactic, curative and symptomatic. Effective prophylactic treatment of arterio-sclerosis requires the earliest possible recognition of the vascular changes and a proper regulation of habits of life, in diet, exercise, exertion, worry, etc. The patient should be urged to live as peaceful a life as possible, cutting off all sources of mental strain and worry. It is not wise, or necessary usually, to urge a man to give up work entirely, as this is more likely to increase than to relieve worry. It is necessary to lighten work, but it is frequently difficult to arrange a man's life so that he may work moderately. Of course in case of complete break down of heart or brain or kidneys, absolute rest is needful. Sound and sensible advice gives these patients more comfort than anything else. Some men get nervous and despondent upon learning that they have hardened arteries and are inclined to give up and quit, believing that nothing can be done for them. Many of these cases, when not too far advanced, have many years of usefulness before them if directed by good advice and a proper mode of life. Mild, well regulated exercise in moderation should be encouraged rather than prohibited. Sedentary life is hurtful and should be combatted by sensible outdoor exercise. Of course all excesses should be avoided. Sudden strains in mind or body are hurtful. A restricted diet is all important in both the prevention and treatment of arterio-sclerosis. The most essential part is the reduction of the amount of food. Quantity is more important than quality; but most authorities have agreed that eating meats, sweets and articles rich in lime salts are harmful on account of their influence as tissue builders and on blood pressure.

A man with arterio-sclerosis, either beginning or well developed, should be taught

to gradually reduce the quantity of food until the minimum on which he can maintain mental and bodily vigor is reached. Most men can do without strong meats very well if necessary. All spirits should be given up. Tea and coffee should be used sparingly, and tobacco should be given up entirely or greatly reduced in amount.

The splanchnic nerves are thought to regulate blood pressure within the abdomen, hence conditions which cause irritation, such as digestive disturbances and constipation, should be corrected or avoided.

The curative treatment of arterio-sclerosis is not very promising. All authors have agreed that the iodides are of value and some claim even curative properties for them. Probably iodide of sodium is the best one, because it is best tolerated by the stomach. It is given in two or three grain doses, three times a day and gradually increased until a point of tolerance, or say fifteen grains three times a day, is reached. This is kept up for a long period, with occasional periods of rest. Great caution is needed to prevent irritation of the stomach, and great tact and perseverance are necessary to get the patient to continue the treatment. The best results are obtained from this treatment in syphilitic cases and younger subjects, but good is claimed for cases where there is no syphilitic taint present. Gray powder is also thought to have curative value. It is administered for long periods with intervals of rest. Of the remedies used to lower blood pressure, nitro-glycerine and nitrate of sodium are the principal ones. When arterio-sclerosis has become well developed the more reliance must be placed upon the symptomatic form of treatment. Remedies to promote better circulation in the arterial system are given for this purpose. Vaso dilators in form of nitro-glycerine and nitrate of soda are the most reliable remedies of this class. In cases of weakened heart muscle requiring the use of strophanthus and digitalis, the nitrates should be used to keep down the blood pressure.

Nothing is of greater service in cases of

diffuse arterio-sclerosis with secondary venous engorgement than the occasional use of calomel and jalap in purgative doses. After all, the main reliance must be placed upon dietetic and hygienic measures to maintain the proper blood pressure and control the unpleasant symptoms.

The management of the complications and symptoms of the special forms of arterio-sclerosis such as the cerebral, the coronary, cardiac and renal, is purely symptomatic and requires such remedies aside from those already suggested as are suitable to each individual case.

ABSTRACTS

The address in surgery before the Ohio State Medical Association, by John Chalmers Da Costa, M.D., of Philadelphia, entitled "Behind the Office Doors," and published as the leading article in the *Ohio State Medical Journal* of July 15, is so full of splendid good sense that it is a pleasure to quote freely from it.

He first denominates himself a *filius terrae* (Child of the Earth), and says therefore that he will not be expected to describe great scientific achievements, and to point out epoch-making discoveries, but desires to indulge in musings which vice or luxury, he says, he is addicted to, in spite of protests from eminently respectable slaves of convention. "I dare to maintain that in such a mood one may seize not only harmony and beauty, but strength and truth, and may develop the flabby muscles of the mind and fit them to swing the sledge of thought!" He excuses himself for this vice of occasional musing by saying, "The purely practical man deals only with the obvious, the inevitable, the evidently possible. The man who ponders and muses bodies forth conjectures and dreams of what men regard as impossible. He, by the magic alchemy of thought, may make probable or at least possible, the thing supposed to be impossible, and then the practical mind forges the possibility of yesterday into the achieved certainty of today. Without winged thought the specula-

tion could not have come at all for test and trial, to the purely practical man. He would not have speculated about anything. He could not found a brilliant hypothesis or a striking theory, though he were to slave in laboratory and library through half a century of toil and study. The history of progress is the attainment of the supposedly impossible. The instigation of every discovery was first a hope, an aspiration, a fancy, a guess, a dream, in the mind of a single man."

As a result of his musings in his early days, while waiting for practice which was reluctant to come, and in his busy days he reached the following conclusions about the profession, its duties, its cares and its rewards, few of which, he says, have had to be repudiated.

1. Everybody maintains that you should paddle your own canoe. In order to do this a man will now and then be found who begs, borrows or steals, both the paddle and the canoe. A tow now and then gives a useful and most welcome rest and may save a career.

2. It is mentally profitable to burn the midnight oil, but it is a great deal more profitable financially to sell it than to burn it. You good people of Cleveland know this truth. If one seeks only wealth he had better go into business than into medicine.

3. One of the earliest discoveries made by a recent graduate is that some members of the medical profession possess marvelous powers in dealing out personal detraction and great versatility in selecting subjects for it. In a public lecture, Lisfranc referred to Dupuytren as "*T'infame du bord de l'eau*," and Dupuytren spoke as follows of Lisfranc, "*Que sous une enveloppe de sanglier on portrait parfois un coeur de chien couchant*."

5. A sensitive man, conscious of worth, finds one of his hardest trials in seeing preference given to ignorant and unscrupulous pretenders. A victim of this common tendency may find some comfort in a story of Mr. Abernethy. I will paraphrase the anecdote. John Abernethy on one occasion spoke to a wealthy quack, and said: "I am

John Abernethy, surgeon, of London. I work and study constantly to know my profession, yet I must walk on my daily rounds. You, an utterly ignorant pretender, ride in a chariot and dwell in a palace; pray tell me why are these things?" And the quack said: "Mr. Abernethy, yonder is London bridge; how many people think you cross it in a day?" Mr. Abernethy said he had no idea, "perhaps a hundred thousand." And the quack said, "And how many of them are fools? You attend the wise men and I attend the fools."

6. When a man begins practice he believes for a few months that his medical neighbors and acquaintances are all the most generous of men, because they send him to visit patients. Later, when in a thorny mood, he changes his views, because he finds out that such patients often live at the jumping-off place, or are addicted to sudden complaints demanding medical attendance at unearthly hours, or are apt to acquire delirium tremens at frequent intervals, or are complaining and censorious, or liable to sue a doctor, and it never dimly dawns upon one of them to pay a single cent. He must gain comfort in such cases from Boerhaave's saying, "The poor are my best patients, for God Almighty is their paymaster." In spite of the great Dutchman's predilection for poor patients, he somehow or other accumulated a huge fortune.

7. As one mounts in years he is apt to specialize less and less upon the purely ideal side of life. He may not be quite sure that the good die young, but he becomes entirely certain that only the young die good.

8. A good many men we meet in life are not trying to leave footprints in the sands of time, but instead are devoting precious energy to covering up their tracks.

9. While a young man is trying to climb up the ladder of fame, his chief difficulty is to avoid being knocked off by older men engaged in coming down.

10. It is just as important for a man to learn what he can't do as what he can do. Each one should try to get a just estimate of his own abilities in various directions.

When he does a thing badly he should learn to do it well or give it up. This applies notably to teaching and operating.

11. Jealousy of a colleague or rival is one of the meanest and most foolish of vices. Everyone has strengths and weaknesses. A colleague can certainly do some things better than he. The account is even. If it is not, and I acknowledge complete inferiority by jealousy, I have no business in the profession.

12. I have seen as grave infractions of medical ethics by older men who knew better than by younger men who did not know. If the abbot plays cards, what can you expect of the monks?

13. There is no system of communication so rapid as the wireless telegraphy of defamation.

14. No man, except perhaps the resident physician, so grossly overestimates his own as one who sues a corporation for damages.

15. When a man has never climbed, but has loafed easily along through the levels of life, he can't climb if the need comes. He is like the canal horse of former days, so accustomed to the level that he don't know how to mount a hill.

16. When I was a young doctor without patients my sign used to look to me like an epitaph on a dead business. The first patient I ever had stole my only umbrella.

17. One of the hardest things about the profession is the requirement that its members shall be always conventionally respectable. The world is pleased by servience to its dicta. Artists and literary men are not required to be respectable. Lawyers don't have to. Politicians are not expected to be. Doctors often don't want to be conventional, but must be unless they have personality. One who is bold enough to defy this public sentiment does so at his mortal peril. Only a real man can defy it successfully, and such a man doesn't care a continental what people think of him or what they will try to do to him. The man who is always showing the world his fear of its growls is sure to be bitten. The world, like a snarling dog, leaves alone the real man who defies it, and

fawns at the feet of one who "flings it a bone."

18. To elect a man to a faculty or to a hospital staff simply because he has influence (family, financial, religious or political) is a crime against humanity and the medical profession. That foul system, when once fixed in an institution or a community, clings like the asp to Cleopatra's breast and instils poison into the veins. If I had the power as I have the will, I'd strike that thrice accursed system dead.

19. A man who becomes an embodied grievance may perhaps be a victim of persecution, but the chances are that he is lazy, incapable, or generally impossible. To have been turned down for every position he wanted is no real claim upon us to elect him to something.

20. A surgeon has great opportunities to do good, particularly if he doesn't care who gets the credit for it. To fight for credit is a dreadful waste of energy. As Joseph Leidy said, "It don't make any real difference who discovered a thing, the important thing is that it has been discovered."

21. "The meek shall inherit the earth," but my experience is that in spite of inheriting it, they seldom get it. It is true that it rains upon the just and the unjust, but when it does the unjust are usually possessed of the umbrellas of the just.

22. It don't matter how sure you are that the world owes you a living, you won't get paid until work identifies you. In surgery the imperative *must* work. The top will continue to spin only while you whip it. The law, in the monastery conceived of by Rabelais, was "do what thou wilt." The law which governs the surgeon is "do all the things that you must do to be worthy of your title and place."

23. Follow Paget's suggestion and note to what direction a surgeon looks for reputation. The dignified surgeon looks only to his own profession. The newspapers may make a man's name familiar to thousands, give him a large practice and help him to get rich, but they can't make him a great surgeon. The Commonwealth of Science is and ever will be a democracy. It

selects its own leaders and does not consent to receive them. Distinction in surgery comes from a mightier ordination than that by the newspaper press, that is, ordination by the medical profession itself. The profession knows its own great men and they are by no means always the ones puffed by the newspapers.

24. A medical certificate of the value of a proprietary medicine is only straw bail. It may be regarded as testimony of character by one who badly needs such testimony for himself. Such a certificate don't teach us much about the drug, but does give us a lot of information about the writer.

25. A great surgeon who does mean things is like the thunder, mighty and majestic, which nevertheless stoops to sour the milk in a poor man's larder.

26. Very rich men are apt to be the victims of neurasthenia. Some of them have to work too hard. They may get an occupation neurosis which we will call coupon-cutter's palsy, and they are liable to be severely strained trying to get daughters off their hands and to set noble son-in-laws on their feet. There is nothing a millionaire is apt to resent so much as a large bill for medical services. He will cheerfully pay a lawyer thousands for doing something to protect his money or to enable him to get more. He usually hates to pay a doctor a few hundred for saving his life. He evidently makes a true estimate of the real value of his life.

27. On who is a slave to numerous office hours is kept by them from steady study and from doing his best work. Office hours may hang upon a man as a millstone about the neck. A surgeon is far better off to see patients by appointment.

28. Nothing is so efficient in clubbing the enthusiasm out of a man as the discovery that his best qualities are counted as detriments. Many a man has been surprised to find out that if he *thinks*, the world calls him a dreamer. If he *studies*, a book surgeon. If he *stands on principles*, an obstinate individual. If he is *tenacious for a cause*, a pugnacious personality. If he *tells the truth*, a rude, blunt and unpleasant mor-

tal. If he joins *no faction*, one unwilling to act or constitutionally incapable of acting with his colleagues.

29. The complete radical is wrong. The complete conservative is wrong. Burke's conception of a statesman applies to a surgeon. He must have a keen disposition to improve *and* a notable ability to preserve. Surgical fashions change as rapidly as fashions in battleships or woman's headgear.

30. When you know the direction to which a man looks for reputation—how he acts to and speaks of brother practitioners—what his relations are with the newspapers—to what degree his lips are sealed about affairs of his patients—how he makes and uses statistics—what is his attitude regarding splitting fees, receiving commission and furnishing certificates of proprietary medicines—you know exactly what kind of man he is.

31. Temptations are apt to come to us disguised as opportunities.

32. Surgical sea serpents are discovered several times a year.

33. One who operates for statistics declines to save some lives.

34. A kindly word of commendation from a great man is long remembered by a young man. It is one of the best of instigations to and rewards for good work. Words of commendation at the right time, evidences of confidence, expressions of medical brotherhood, save many a beginner from despair. A helping hand is of the greatest value, not only because it materially aids a man in rising, but also because the warm clasp of sympathy gives him strength and desire to fight his own way upward.

35. Objectionable people are numerous. They have one trait in common, that is, most unfortunate tendency to longevity. Few die and none resign. They haunt physicians' offices. Among them I would mention: That breathing outrage, the fierce female who glares petrefaction on all who enter the private office ahead of her.

The human disaster who constantly borrows trouble and pays some of it off to you whenever he calls.

The unescapable calamity, the doctor who

has a row on his hands and wants to get you into it.

The lawyer whose client has traumatic neurasthenia and wants to sue a street car company. Some of these lawyers remind us of Milton's description: "Men allured to the trade of law, who ground their purposes not on the heavenly contemplation of justice and equity, but on the promising and pleasing thoughts of litigious terms, fat contentions and flowing fees."

The undertaker who leaves his wagon in front of your door while he comes in to get a death certificate signed.

The life insurance agent who proves that without insurance your family will be reduced to begging bread from door to door.

The religious beggar who has a mission, and a peculiar hat, who snuffles grievously in conversation, who serves a good cause, and would persuade you that a small contribution will be to you a sort of fire insurance against an inextinguishable spiritual conflagration. Such a man is a true philanthropist, that is, he tries to get you to give your money to somebody else, although he gives none to himself.

The friend with nothing to do, who just drops in when you are busiest to have a little talk. He forgets that a doctor's time is exchangeable for other people's money. Every caller of this description picks the doctor's pockets, and is an embodied pestilence.

The patient who is always late and you just as you are ready to leave.

The fellow who *will* come too early and disturb the tranquility engendered by the morning cigar.

The agent who is an M.D. and sends in his doctor's card.

The sexual hypochondriac loaded down with specimens. The drug agent who desires to describe it all. The patient who don't know when to leave and is as hard to get out of the office as an ocean liner off the stocks. The book agent who points out the names of subscribers, must have your name to complete the list, and is convinced that failure on your part to sign will cause a blight to settle on you and your remotest posterity for duty unfulfilled.

The man who wants to sell mining stock.

RESOLUTIONS BEARING UPON PELLAGRA.

Following is a full text of the resolutions, bearing upon pellagra, adopted at a meeting of the State Board of Health, held Tuesday, July 25, 1911:

RESOLUTION BY LOUIS LEROY, M.D.

"WHEREAS, The etiology and pathology of the disease known as pellagra are obscure and the nature of the disease is not well understood, and while the weight of authority in the past favored the idea that the disease is not communicable, still, in view of the fact that the history of the present outbreak in the United States, and especially the cases in Tennessee, give strong evidence that the disease is communicable; therefore, be it

.. "*Resolved*, That in view of the fact that pellagra is greatly on the increase in the State of Tennessee, and that the subsequent observations of the State Board of Health tend to strengthen their conviction of the infectious nature of the disease, as previously expressed, it is hereby directed that all penal and charitable institutions of the State, county and municipality, provide suitable isolation quarters for any cases which may develop in each institution and that all municipal and county health officers be directed to expend all possible effort to secure the isolation of all cases under their supervision."

RESOLUTION BY R. E. FORT, M.D.

"WHEREAS, Hundreds of cases of pellagra have been reported to this Board, showing its rapid spread in Tennessee within the last few years; and

"WHEREAS, It is the most serious problem confronting this Board at this time; and

"WHEREAS, Under the present law this Board has not the authority to isolate or confine pellagra cases; and

"WHEREAS, It is a recent disease in Tennessee, therefore its 'etiology and pathology' are not well known to the profession; therefore, be it

"*Resolved*, That this Board employ three physicians who have had 'clinical experience in the care and treatment of pellagra, to visit the counties of the State where the disease is present or suspected; to assist the county and municipal health authorities and the physicians in the care and isolation of the disease."

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Devoted to the Interests of the Medical Profession of Tennessee

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EDITORIALS**LOS ANGELES SESSION OF AMERICAN MEDICAL ASSOCIATION.**

The sixty-second annual session of the American Medical Association, as reported by those who attended it, was a notable one. In spite of the distant location of the place of meeting and the considerable expense incident to long journeys, the registration was more than 2,100, including representatives from every State and Territory, as well as from the insular possessions and several foreign countries. Most of those in attendance were accompanied by one or more members of their families, so that, including "near" physicians, the total number of visitors in Los Angeles on account of the A. M. A. meeting was not far short of 5,000.

Twelve physicians were present from Tennessee, a larger number than from any other Southern State with the exception of Texas (48) and Kentucky (20).

The scientific work of the session was of a distinctly high order, the exhibits unusually numerous and attractive, and the social features most elaborate and enjoyable. It was the consensus of opinion with reference to the last mentioned that the Los Angeles profession had set a standard of hospitality and entertainment which would long remain unexcelled. Trips to the shore and on the ocean, auto rides, smokers, receptions, barbecues, etc., were offered in such profusion that any one so disposed might easily have given his entire time to the pursuit of pleasure. There is no more beautiful city on our continent. With unmistakable evidences of the most phenomenal prosperity apparent on every hand, with a citizenship composed of the cream of other sections, including a large proportion from the Southern States, with

an environment which embraces the distinctive charms of sea and mountain and fertile valley, with a glorious all-the-year-round climate in which gorgeous flowers revel and orange groves flourish as nowhere else to a like degree, it may truly be said that Los Angeles is a favored city in a land of enchantment.

The writer's time was largely given to the work of the House of Delegates. Out of a possible 150 delegates, 121 were present, thus evidencing the fact that membership in that body is regarded both as an honor and as a sacred trust. Much of the work was of a routine character, but several matters of more than ordinary importance were considered and disposed of. Most notable of these, perhaps, was an amendment of the by-laws by which a permanent Judicial Council was created. The council is composed of five members and is clothed with final jurisdiction in all questions in which the A. M. A. or any of the constituent associations are involved. In addition it is charged with the duty of investigating "professional conditions and all matters pertaining to the relations of physicians to one another, and to the public," with a view to devising methods of putting a stop to any abuses and elevating the profession in every way. The magnitude of the task set will be better appreciated when it is remembered that questions of interest and importance have been pending for a number of years because there was no tribunal clothed with power to pass upon them. To all intents and purpose the Judicial Council as now constituted is the supreme court of the American Medical Association.

Another action of the House of Delegates which will be of interest to a large part of the profession was the creation of a new section on Hospitals. This will afford an opportunity long desired for those interested in the many problems concerning hospitals and hospital management to come together for their discussion. Great good will doubtless result.

The President, Dr. John B. Murphy, made an admirable presiding officer, announcing

his decisions quickly and impartially, and lending all the dignity and earnestness of his splendid character to the work in hand.

In the selection of Dr. Abraham Jacobi as President-elect the Association added another distinguished name to the long list of those who have honored and been honored by the office. In character as well as in scientific achievement the "Grand Old Man" of New York is eminently fitted to adorn the illustrious company to which he has been elevated.

Another noteworthy result of the Los Angeles meeting was the retirement of Dr. Geo. H. Simmons as Secretary. His invaluable services will, however, not be lost to the profession, as he remains Editor and General Manager of the Journal.

Dr. C. A. Craig, of Pennsylvania, was elected Secretary without opposition. He has served as assistant to the Secretary for the past year, and is thoroughly conversant with the important duties of the office.

In the apportionment of the minor honors the South fared well. The Second Vice-President was chosen from Georgia and two Tennesseans were honored with important appointments on the Council on Medical Education and the Judicial Council respectively.

A. B. C.

ADVANCES IN MEDICAL EDUCATION.

While it is no doubt true that in the early sixties when few medical colleges existed in the South and our students rode on horseback to Philadelphia and Baltimore in order to secure a medical education, that there was then some feeble effort made looking towards the betterment of educational conditions for medical men. It was not, however, until 1895 that the wave of discontent from both medical men and the laity in general, reached the many proprietary medical colleges which had sprung up throughout the country, and caused them to take an inventory of their rights of existence. This resulted in the closing of a few of the so-called "diploma mills," and the organization of the Southern Medical College Association, whose object and purpose aimed toward the betterment of con-

ditions which up to that time were shamefully lacking in practically all of our Southern institutions. Through their influence, three years of seven months each with at least a semblance of preliminary education, replaced the old course of two years of five months each, without educational requirements for admission. The Southern Medical College Association, having in its membership many of the better southern institutions, strove hard to improve conditions, both as to entrance requirements and curriculum. Many of these colleges were being run for profit, and the amount of the dividend depended entirely upon the number of students matriculated. The results were naturally a disobedience to the laws of the association, though ostensibly approving them. The Association of the American Medical Colleges, together with the Council on Medical Education of the American Medical Association, have done much towards raising the standard, not only in the South, but throughout the country as a whole. Through their efforts the term has been lengthened to four sessions of thirty weeks each, with an entrance requirement of a four-year high school diploma or its equivalent, the requirements being proper laboratory training and proper clinical facilities for bedside and hospital instruction. Through the publication of unworthy medical colleges, state boards have come to know the relative teaching efficiency of all colleges in America; and prospective students no longer seek a cheap and unworthy school, but strive for admission into the best. The propaganda of medical reform, which has been waged, has resulted in much good, and while it has no doubt caused financial loss to a few, it has been of inestimable value to the many. In our own state three medical colleges have gone out of existence within the past two years and the consolidation of others gives promise that our state will soon come into her rightful own and be recognized as a fountain head from which the highest and noblest ideals in medicine may be drawn. The removal from Nashville of the Medical Department of the University of Tennessee

and the dissolution of the Medical Department of the University of Nashville leaves but one medical college in Nashville, Vanderbilt University. They have selected with great care from the many capable teachers in this city a faculty with high ideals, who are ambitious to regain for Nashville her former prestige as a medical center and who, we doubt not, will succeed through the influence of this splendidly equipped institution in restoring Nashville to its former medical fame.

DOCTOR WILEY.

We are sure that we would voice the sentiments of the membership of the state society when we condemn the action recently taken by those in power to discredit the very efficient and capable service rendered to the country at large by that fearless champion of the pure food and drugs law, Doctor Wiley. The entire country recognizes the efficiency of this bill, except the interests affected by the proper enforcements of its provisions, and naturally they are making a powerful fight on Doctor Wiley and his associates. The trumping up of this seeming irregularity is but an evidence of what they are compelled to resort to in order to protect their interests. The offense with which Doctor Wiley is charged is the merest technicality and one which, we hope, the President will dismiss with complete exoneration to Doctor Wiley.

ABRAHAM JACOBI.

To be elected to the Presidency of the American Medical Association at the age of eighty-one is a signal honor indeed, but it is a still greater honor to have overcome the handicap of foreign birth with a lack of knowledge of our language, penury and lack of friends, which was the condition of Dr. Jacobi when he came to our country an exile. Few men in the profession have attained greater fame than Dr. Jacobi. He has long been a leader in the medical world, and age has increased rather than diminished his usefulness.

As has been previously stated in the col-

umns of this JOURNAL, the profession of the State should be in more intimate relation with the State Board of Health, and with the various county boards and should give them every possible assistance, for it is only through the co-operation of the various physicians throughout the State that much needed health reforms may be instituted. We are just informed of the appointment of Dr. Krauss, of Memphis; Dr. Brooks, of Chattanooga, and Dr. B. S. Rhea, of Lebanon, as a special commission to assist the Board of Health in handling the pellagra situation, which is rapidly becoming a factor to be contended with in our State. We repeat that it is the duty of the profession to give these gentlemen every assistance within their power and we trust that none of our members will be found lacking.

DEATHS

Dr. S. L. Jones, whose home was at 242 Deadrick Avenue, Knoxville, Tenn., and while surrounded by members of his family, died at Mineral Hill Hotel, this State, Wednesday, July 19, 1911, at 8:30 a. m., where he had gone but a few weeks previously in the hope of staying. What his closest associates in the profession knew to be the inevitable result of a disease of several years' standing, though only recently manifesting symptoms of a threatening character. While he had been a great sufferer for some weeks prior to his death, yet the end came peacefully and without pain. His death was primarily due to an organic heart-lesion, in the wake of which were developed a nephritis and a general arterio-sclerosis. He was buried near this city in Woodlawn Cemetery, members of the faculty of the Medical Department of Lincoln Memorial University being the active pall-bearers, while the honorary pall-bearers were chosen from among the members of Knox County Medical Society and the Masonic fraternity of this city.

Dr. Jones was in the 57th year of his life. He graduated in medicine from the Medical Department of the University of Louisville; began the practice of his chosen profession

as a resident of Friendsville, Blount County, Tenn.; moved to and located in Knoxville some twelve or fourteen years ago, where he continued, up to the time of his death, to be an active member of the profession, enjoying a lucrative practice and the respect and confidence of all who made his acquaintance. Soon after locating in Knoxville he became a member of the faculty of the Tennessee Medical College, now the Medical Department of Lincoln Memorial University. When the old Tennessee Medical College was taken over by the Lincoln Memorial University and its reorganization determined upon, the University made Dr. Jones Dean of its Medical Department, which position, together with the chair of Physical Diagnosis and Diseases of the Chest, he held at the time of his death. Also, he was a member of the Knox County Medical Society, the Tennessee State Medical Association, and the American Medical Association, and at the time of his death he was a prominent member of the Masonic fraternity and a devout member of the First Presbyterian Church of this city.

Dr. Jones had been twice married, his last wife and his three grown daughters by his first marriage surviving him. For several years he and his son-in-law, Dr. Wm. A. Greer, had occupied office rooms together in this city.

At a meeting of the faculty of the Medical Department of Lincoln Memorial University called soon after advice of his death was received in Knoxville, the following resolutions were unanimously adopted:

WHEREAS, It has come upon the faculty of the Medical Department of Lincoln Memorial University, through the providence of the Allwise Ruler of the Universe, to give up in death one of its members, Dr. S. L. Jones; and

WHEREAS, The efficient and kindly services rendered this body by the deceased member in the capacity of Dean of the faculty has so endeared him to us as to make it proper that we place on record our appreciation of his services; therefore, be it

Resolved, By the faculty of the Medical Department of Lincoln Memorial Hospital

that, while we, in deference to the will of the Supreme Ruler in the affairs of men, humbly submit to this manifestation of his providence, we do not the less regret our loss and mourn for him who was our confrere in the toil incident to this life, and has now been taken from among us.

Resolved, That in the death of Dr. S. L. Jones, this faculty has lost a member who at all times was faithful to any and every trust reposed in him, and discharged his duties, both as Dean of the faculty and as a member of its teaching force, in a manner characteristic of the wise, conscientious, energetic and prudent man, which a long and close association with him so positively proved him to be.

Resolved, That these resolutions be entered upon the records of this body, that a copy be sent to the family of the deceased member, and that a copy be furnished each of the local newspapers, with a request to publish the same.

W. S. NASH, M.D.,
Chairman Pro Tem.
S. D. ACUFF, M.D.,
Registrar.

Dr. John Millard, one of the most popular physicians in Sullivan County, died at his home near Bluff City, July 20. He had been in active practice for more than forty years, being a native of the above county. He is survived by one sister, three sons and two daughters.

Dr. John Leonard, of Troy, Tenn., died at the home of his father, Mr. Sam Leonard, of Petersburg, Tenn., on July 27. He leaves a father, mother, three sisters and four brothers: Dr. Morris Leonard, of Nashville; Dr. T. D. Leonard, of McMinnville; Mr. Jas. Leonard, of Oklahoma City, and Professor Robert Leonard, of Texas.

NEWS NOTES AND COMMENT

Doctors W. E. Hibbett and B. G. Tucker, together with Mr. Holman, a Nashville architect, have just returned from a tour of inspection to the larger cities where they have been in search of ideas relative

to the erection of proper buildings for the Davidson County Tuberculosis Hospital. The buildings will soon be begun, and we are assured that they will be erected under the most economical and efficient plans. The hospital is now open and is receiving male patients. They hope soon to be ready for the reception of females.

Dr. R. S. Campbell, recently of White County, has removed to his former home, Pennington Gap, Va.

Dr. R. A. Manker, who has been living at Whitesburg for the past two years, has recently located in Memphis.

Dr. S. M. Ryburn, formerly of Bristol, who has been spending several months in the New York Hospital, has located in Morristown and will limit his practice to the eye, ear, nose and throat.

Doctors Cooke, Savage, Litterer and Handley have returned from Los Angeles, Cal., where they attended the American Medical Association meeting.

An early morning fire on Sunday, July 30, completely destroyed the office of Dr. Chas. Gertrude Graham over Nicklin's drug store. This was one of the most elegantly furnished and best equipped offices in Chattanooga. Loss, \$2,500; insurance, \$1,000. Dr. Graham will occupy apartments in the new Flatiron building on its completion.

The partnership of Drs. J. McChesney Hogshead and A. Douglas Cleary, existing as the Chattanooga Eye, Ear, Nose and Throat Infirmary, has been dissolved. Dr. Hogshead will continue the institution, while Dr. Cleary, after a vacation, will locate elsewhere.

Dr. B. S. Wert, one of Chattanooga's most prominent physicians, has the sympathy of the entire profession over the loss of his son, who died recently after a prolonged illness.

Dr. W. H. Cheney, of Chattanooga, had his new Parry car almost completely demolished on the night of July 30 by run-

ning into some building materials on Boyce Street. The doctor emerged from the wreck absolutely uninjured.

At the meeting of the Chattanooga Society on August 18 all the nurses of that city will be invited to attend. Two essays will introduce the discussion, "The Doctor and the Nurse," (a) "From the Nurse's Standpoint," and (b) "From the Doctor's Standpoint." This will be the first joint meeting of doctors and nurses ever held in Chattanooga.

Dr. E. B. Anderson, of Chattanooga, reports the grandest trip of his life to the Los Angeles meeting of the A. M. A., and says the entertainment features were especially fine and well arranged.

Dr. A. Douglas Cleary, of Chattanooga, has gone to Manitou for a vacation.

Drs. John B. Steele and Ebb. C. Johnston of Chattanooga, have returned from a sojourn at St. Simon's Beach.

Dr. Leopold Shumacher, of Chattanooga, has accepted the position of Associate Professor to the Chair of Practice at the University of Wisconsin.

Dr. George R. West, of Chattanooga, is now resuming his practice after a period of illness.

Commissioner of Health H. Clay Evans addressed the Chattanooga Society on the evening of July 14. He is going to completely reorganize the health department of the city and asks the co-operation of all physicians. Just at present Commissioner Evans is devoting himself to the question of vital statistics, and new blanks for reporting births, deaths and contagious diseases are being prepared.

Dr. J. A. Gaines, of Nashville, is spending the latter part of July in Chicago, Ill., and Rochester, Minn.

Dr. Eldred B. Casey, who has been doing post-graduate work in London and Vienna for the past seven months, has returned to

Nashville, and will, for the present, be associated with Dr. L. B. Graddy, of this city.

Dr. J. C. Brooks, present City Food Inspector of Chattanooga, and one of Chattanooga's best known physicians, tendered his resignation to accept the position as Inspector for the State Board of Health for East Tennessee.

Dr. J. A. Albright, Secretary of the State Board of Health, in his annual report at a recent meeting, highly commended the work of Drs. Olin West, William Litterer and Lucius Brown.

The Giles County Medical Society enjoyed its annual barbecue on July 28, after the regular meeting. A large number of guests enjoyed the roast lamb, buttermilk and condiments. Several new members were admitted. A paper on "Angina-Pectoris," by Dr. R. E. Aymett, will be read at the next meeting, and Dr. C. A. Abernathy will open the discussion.

The following gentlemen have been added to the Faculty of Vanderbilt University: Drs. Hilliard Wood, W. D. Haggard, Perry Bromberg, Robert Caldwell, H. M. Tigert, W. E. Hibbett, R. O. Tucker, C. E. Brush, W. A. Oughterson and Dr. McP. Glasgow.

Dr. Hilliard Wood, of Nashville, is the proud father of a bouncing baby boy.

SOCIETY PROCEEDINGS

GILES COUNTY.

We have about forty doctors in this county, twenty-five of whom are members of the society and three more applications for membership will be passed upon favorably at the next meeting. The rest of them have been asked repeatedly to join the society, but for some reason there are a number of physicians in this county who do not show any interest and do not seem to have any desire to become members.

In regard to dues, I will state that our record is clean on that score, for all our dues have been collected and sent to Dr. Bilbro for the last two years.

We have our meeting on the fourth Friday in the month and there is always a fair attendance and a paper is always read and a lively discussion follows. In the future I will send you a synopsis of the proceedings of our meetings.

In regard to stimulating flagging interest, I will state that it is our custom to have a barbecue once a year and invite all the physicians in the county to be present. The barbecue for this year will be held on the fourth Friday of this month, and I am making every effort to have a record-breaking attendance and I hope to be able to add several new names to our membership.

Altogether, our society is in good condition, but I am bending my efforts toward making it better. I have urged the members to write papers for publication in the Journal, and hope to be able to send you some within the next six months.

I was in the House of Delegates during the last meeting and heard the Journal discussed at length, and for this reason you can be assured of my assistance in upholding the Journal.

Wishing you and the Journal every success, I am,

Yours fraternally,

SHIELDS ABERNATHY, Sec.

HAMBLLEN COUNTY.

The Hamblen County Medical Society met with the Secretary, Tuesday, July 11, at 8 p. m. A very interesting and instructive paper was presented by Dr. F. F. Painter on "Iodine," which was freely discussed and enjoyed by all members present.

Our society meets the second Tuesday night of each month. Our membership is very active and as a rule meetings are well attended.

W. G. RUBLE, Sec.

HAMILTON COUNTY.

The weekly meeting of the Chattanooga Academy of Medicine and the Hamilton County Medical Society was held July 28, 1911, at 8 p. m.

President James H. Atlee presided. Roll of members called, forty-eight being present. Several visiting physicians were

present. Minutes of the last regular meeting were read and approved. A case of hypertrophied prostate, with exhibit of specimen, was reported by Dr. E. B. Anderson. Cases of pellagra were reported and discussed by Drs. Y. L. Abernathy, J. M. Selden, J. M. Broyles, S. I. Yarnell and J. B. Steele.

Dr. William Litterer, of Vanderbilt University, Nashville, read a most interesting essay entitled "Bacterial Vaccines, a Factor in Therapeutics," illustrated with charts. This was one of the finest scientific treats the local profession has ever listened to. Discussion opened by Dr. Raymond Wallace. Discussion continued by Drs. H. L. Fancher, E. T. Newell, J. B. Steele, E. B. Anderson and J. B. Haskins. Discussion closed by Dr. Litterer. The Society adjourned.

H. P. LARIMORE, *Secretary*.

MEMPHIS AND SHELBY COUNTY.

The Shelby County Medical Society held their regular meeting on June 6, 1911, with the President, Dr. Battle Malone, in the chair, and the following members present: Drs. Dunavant, Hill, Moore, Mitchell, Lawrence, Haynes, Dickson, Cullings, Duncan, Everett, Beatty, Meeker, Burns, Bearden, Edwards Beauchamp, Castles, Sauls, Wallace, Savage, Brinson, Ayers, Mason, Campbell, Simpson, Fontaine, Rosamond, Haskell, Curry, Andrews, Smith, Johnson, Cunningham, Ham, Black, Kane, McCown, Hall, Ellett, Myer, Watkins, Nelson, Lewis, Carter, Taylor, Minor, Thornton, Bridger, Crutcher; and Drs. Barfield, Spingard, Swink, Bernard, Davenport and others as visitors.

Dr. J. F. Hill read a paper entitled "Earache."

Dr. Simpson, in opening the discussion on this paper, emphasized the necessity of examination for and the removal of adenoids, when found in the prophylaxis of otitis media, also the importance of early drainage of the middle ear by a paracentesis of the drum in the acute cases.

Dr. Hill explained that the main object of his paper was to give the general practitioner an outline of treatment by which

to allay the pain and suffering of the acute attacks.

Dr. Jacobs not being present, his paper upon "Infantile Diarrhoea" was passed.

Dr. Haynes presented a report for the committee appointed to interview the Mayor relative to charges and statements made against Mr. A. F. Tate, Superintendent of the Memphis City Hospital, which report was accepted and the committee discharged.

A communication from Dr. Goltman, Chairman of the committee to appoint a committee to confer with the Mayor relative to some better plan of management of the City Hospital, was read.

Resolutions were passed condemning Mayor Crump for his inaction in this matter and reiterating the belief of the Society in the unfitness of Mr. Tate for the position held by him.

The Society then adjourned.

B. N. DUNAVANT,
Secretary.

A special meeting, open to the public, was held in the Goodwin Institute Auditorium on June 20, 1911, with the Vice-President, Dr. J. W. Price, in the chair.

The program was limited to a symposium discussion on "Certified Milk." The following papers were read:

"Dairy Methods Necessary for the Production of Certified Milk," Mr. J. D. Baker, formerly of the Dairy Division, Department of Agriculture, U. S. Government.

"The Relation of the City Laboratory to the City's Milk Supply," P. W. Holtzendorff, City Chemist and Bacteriologist.

"The importance of Impure Milk in the Causation of Infantile Diseases and Infantile Mortality," E. C. Mitchell, M.D.

"The Medical Milk Commission, Its Organization and Methods and Results Accomplished in Other Cities," A. G. Jacobs, M.D. To open discussion, M. Goltman, M.D.

A moving picture demonstration showing sanitary and unsanitary methods of dairying was given. This film was especially gotten up for the Chicago Milk Show, and has been shown in similar movements in many other cities of the North and East.

Following the papers a general discussion of this subject was held, after which the Society adjourned.

B. N. DUNAVANT,
Secretary.

ROBERTSON COUNTY.

The fourth bi-monthly meeting of the Robertson County Medical Society was held in Greenbrier, Tuesday, July 18, with an attendance of ten out of a membership of twenty-two. The meeting was presided over by Dr. Miles Scott, President. The plan of the meetings for this year is that all topics shall be conducted by a director; the director may have a paper if he desires to have one, but it is suggested that the discussion be in the form of a lecture or quiz, with the understanding that questions may be asked at any time, either by the director or any of the members, and this plan seems to be satisfactory so far. The subject of abortion was discussed, Dr. Fyke acting as director in the absence of Dr. House. Antipyretics was the second subject discussed, Dr. Freeman acting as director, but he presented his ideas by reading a paper. Dr. Ramer discussed fractures by the lecture plan and asking questions. Every subject was thoroughly discussed by nearly all present joining in the discussions. The Society was entertained by the home physicians at the Worsham House. The sessions of the Society are held at different places in the county through the summer months and in Springfield the remainder of the year. We have found this to be a better plan than to have all the meetings in Springfield. The next meeting will be held in Turnersville.

B. F. FYKE, *Secretary.*

SMITH COUNTY.

Dr. Perry Bromberg, *Secretary-Editor*,
Nashville, Tenn.

MY DEAR DR. BROMBERG: In reply to your letter of July 27, I will state that I am in sympathy with the move you have inaugurated to overcome the difficulties that are in the way of a complete organization of the medical profession of this State, but feel sure that I am doing all that is in my power to effect this result in Smith County.

If you will refer to your records you will find that I have made all necessary reports and have paid to Dr. Bilbro \$28.00, the State dues on fourteen paid-up members of the Smith County Society.

I did not collect any dues from Dr. R. T. Parker, of Dixon Springs, for he came to us in March from the Macon County Society by transfer, and it was my understanding that he had already paid his dues for 1911. I made mention of this fact in a foot note on my report.

Now, as to the thirteen doctors in our county, who never were members of the society, I will state that they have been solicited, begged and entreated from time to time, but still they hold out, thereby demonstrating to us that sociability and society work is of no service to them.

Our Society is doing good work. We deal with clinics and reports of clinical cases, besides two or three essays, at each meeting. These reports and essays usually result in liberal and general discussions that are instructive, and they prove beneficial to all present. I do not believe it would be out of order for you to run up to Carthage and read us a paper September 1.

Let me hear from you.

Yours truly,

B. J. HIGH, *Sec.-Treas.*

WHITE COUNTY.

The White County Medical Society met in regular session on Thursday, July 13, with the following members present: Drs. Breeding, Brock, Gaines, Gott, Johnson, Lewis, Mason, Richards and Smith. Dr. R. E. Lee Smith delivered a splendid lecture on "Hookworm," calling attention to frequent complications with pellagra, which was followed by a good discussion.

Dr. P. K. Lewis, of Doyle, will read a paper in August on "Appendicitis in the Country."

The White County Society meets the second Thursday of each month at 12:30 p. m. in the office of Dr. A. F. Richards. We have a membership of eighteen, most of whom attend regularly. A perfect fraternal feeling exists in our county, which

is, I think, the direct result of our county society, which has failed to meet but few times in fifteen years.

The officers for 1911 are: Dr. W. B. Cantrell, Cassville, president; Dr. J. R. Gott, Clifty, vice president, and Dr. A. F. Richards, Sparta, secretary-treasurer.

Respectfully,

A. F. RICHARDS, *Sec.*

A CONTRIBUTION FROM THE CHATTANOOGA SOCIETY.

It has been the experience of this society that it is a splendid plan to occasionally have an out-of-town physician appear on the program. This tends to keep the local profession fully abreast of the times, as your visitor will always give you the most advanced ideas at his command. It stimulates attendance to a most marked degree—not only attendance of your own members, but non-affiliated doctors. This later class become thus interested in the society work and often join. Also, it is not unusual for physicians from your near-by towns to attend—this feature depending altogether on the liberal use of a large and well selected invitation mailing list. The Chattanooga society believes that attractive notices of meetings together with a most generous expenditure of postage will get results.

This society first inaugurated to any considerable extent the plan of having out-of-town physicians on the program during the year 1909. During that year seven such were on the program and each and every one was on hand at the appointed time. The 1909 list consisted of Dr. R. M. Harbin, of Rome, Ga.; Drs. R. E. Fort, Wm. Litterer, W. D. Haggard and Geo. H. Price, of Nashville; Dr. E. G. Ballenger, of Atlanta, and Dr. W. A. Applegate, of Washington. So far for 1911 eight out-of-town physicians have appeared before this society and three are yet to come before the year closes. During 1909 we met only twice a month, but last year and this year weekly meetings are held so that the program is in no measure monopolized by your visitors.

On March 17, this year, we had Dr. Hobart A. Hare, of Philadelphia; on March 24,

Dr. M. L. Heidingsfeld, of Cincinnati; March 31, Dr. Victor C. Vaughan, of Ann Arbor; April 7, Chas. A. L. Reed, of Cincinnati; May 5, Dr. Michael Hoke, of Atlanta; May 26, Dr. E. M. Sanders, of Nashville; June 30, Dr. Wesley E. Taylor, of Atlanta, and on July 28, Dr. Wm. Litterer, of Nashville. All the foregoing were listed on our printed program issued at the beginning of this year with the exceptions of Drs. Hare and Vaughan. These gentlemen were in the city in attendance upon the Coca-Cola trial and gladly consented to appear before us. We are yet to have on September 1, Dr. Perry Bromberg, of Nashville; on October 20, Dr. W. F. Westmoreland, of Atlanta, and on November 24, Dr. Olin West, of Nashville.

The details of the programs for these special meetings are given careful thought, the best discussion possible arranged for in advance and the social features attendant upon each visit carefully and judiciously planned and allotted. These men come on invitation and the only reason they do not oftener visit county societies is that they are not invited. Show them you have a live, wide-awake organization and they are not only willing to come but appreciate the opportunity.

As stated, this keeps the interest in the society work at a high tide—a noticeable increase of average attendance to hear the local men is shown. And, besides, it stimulates the local men to do their very best when writing essays. When your membership is kept busy with scientific programs that are worth while, with reports and discussions of interesting cases and exhibits of cases and specimens there is no time or disposition for petty personalities—everyone works in harmony for the society's good. Members will then be proud of their county society—will like for their friends to know they belong—will discuss its welfare one with another and make most useful suggestions. Every meeting, whether it is a local man or an out-of-town man, must be given individual attention—plans formulated three or four weeks in advance—your

essayist becomes enthused and gets to work. Result is a good paper, one worth hearing, one that elicits good discussion and the members are glad they came to the meeting.

BOOKS RECEIVED.

CASE HISTORIES IN PEDIATRICS. By John Lovett Morse, A.M., M.D., Assistant Professor of Pediatrics, Harvard Medical School, Associate Visiting Physician at the Infants' Hospital and at the Children's Hospital, Boston. Octavo of 320 pages and a few illustrations. Price, express prepaid, \$3.00. W. M. Leonard, Publisher, 101 Tremont Street, Boston, Mass.

THE PRACTICAL MEDICINE SERIES Vol. 4. Gynecology. Edited by Emilius C. Dudley, A.M., M.D., and C. von Bachele, M.S., M.D. Series 1911. Published by The Year Book Publishers, Chicago.

ONE HUNDRED SURGICAL PROBLEMS. By James G. Mumford, M.D., Visiting Surgeon to the Massachusetts General Hospital; Instructor in Surgery,

Harvard Medical School; Fellow of the American Surgical Association, etc. Octavo of 354 pages. W. M. Leonard, Publisher, Boston, Mass. Price, \$3.00.

BOOKS REVIEWED.

Dr. Morse's book, "Case Histories in Pediatrics," comprises one hundred actual histories selected to present as thoroughly as possible, for physicians, a post-graduate clinical course in diseases of children.

Each history is presented under the captions, History, Physical Examination, Prognosis, and Treatment. Much attention is given to diagnosis, which is thoroughly discussed by naming diagnoses which might with some reason be made, and eliminating each in turn by careful reference to clinical signs and symptoms, the final diagnosis being that which cannot be set aside and which all symptoms support.

Treatment has received most attention. Both diagnosis and treatment have in each case been verified by subsequent history and are hence without error.

The book is original and thorough, and the most interesting as well as the most valuable in this department for the general practitioner.

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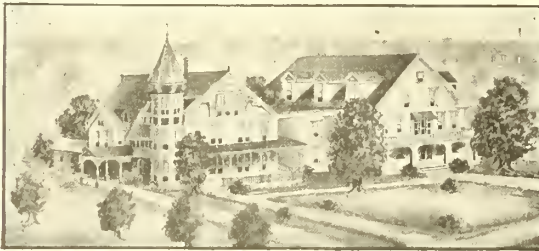
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NUMBER 5

THE CLINICAL PATHOLOGY AND SURGICAL PHASES OF GOITER.*

BY WILLIAM D. HAGGARD, M.D.,
NASHVILLE, TENN.

*Professor of Surgery and Clinical Surgery,
Vanderbilt University.*

The last decade has witnessed the renaissance of goiter.

While enlargement of the thyroid gland is one of the oldest pathological entities, recent investigations into its pathology and surgical management have been so stimulated that it has assumed a conspicuous place in the scientific problems of the day.

The intricate physiology of the thyroid gland and its relation with the ductless glands has been the subject of painstaking scrutiny and experimentation.

The thyroid is one of the most important glands of the body, mysteriously presiding over metabolism and growth. If it is absent or atrophic at birth, the child, while appearing normal at first, will, at the end of its half year, show evidences of cretinism, with the peculiar Mongolian characteristics. As showing its important physiology, nature has generously provided for its protection and function. While it only weighs one-tenth as much as the brain, it has, with its four arteries, a greater blood supply. All the blood in the body goes through the thyroid gland once an hour, as it does through the brain. It is also a sex

gland. In the invertebrates it empties into the uterus. It becomes normally enlarged at puberty. It is physiologically hypertrophied during gestation. If it does not enlarge normally by the latter months of pregnancy nitrogenous metabolism is interfered with, toxemias arise and puerperal convulsions may ensue. The early toxemias can be corrected by the administration of thyroid extract several hours before the usual morning sickness.

At the change of life, the vaso-motor changes, hot flashes, etc., are probably dependent upon the hyperthyroidism, the last flare-up of the thyroid secretion preparatory to the cessation of the active function of its associated gland. When this occurs and the menopause is passed, and the gland undergoes atrophic changes, then hypothyroidism with its attendant taking on of flesh, occurs. This, and some other forms of obesity, may be overcome by thyroid feeding.

The ductless glands seem to be mysteriously associated in function. When the pancreas is removed experimentally diabetes will result. If the thyroid gland is taken out the sugar in the urine will disappear; whereas, if the thyroid is removed first, and then the pancreas taken out, diabetes will not occur.

What stimulates the thyroid gland to over-growth and over-activity? Some element in the water obtained by its passage through the soil, presumably iodine, which

*Read before the State Medical Association of Texas, at Amarillo, May, 1911.

is known to be a special secretory stimulus to the thyroid gland, is the most probable explanation. It may be due to some nutritional systemic disturbance, as suggested by Marine. When we come to the graver changes in the gland, attended by hyper-secretion and toxemia, we are still at sea in identifying its exact cause.

countries, where they are endemic, been subjected to successful surgical removal. Thus, Kocher has removed 4,359, and in the last thousand there have been only three deaths. The question may then be asked, what does it profit a person to carry a goiter about? While they are apparently innocent over long periods, it is well known



1. Diffuse Nodular Colloid Goiter, Right Lobe. Circumscribed Nodules in Right Lobe Extirpated, Left Nodules Enucleated, March 29, 1911. Recovery.

While many simple enlargements of the thyroid, especially in girls at puberty, and under twenty, disappear in a few months or years with and without treatment, and, as has been said, in spite of treatment, still there are those enlargements which, from their deformity and unsightliness, become a nuisance and prove rebellious to all forms of medication. These growths have for a long time, particularly in mountainous that they are prone to many forms of degeneration and complications. Recently we have become more keenly alive to the fact that an apparently inoffensive goiter may take on symptoms of hyperthyroidism (exophthalmic goiter) and thus usher the patient into a most distressing train of symptoms. It is in this serious disease, affecting as it does, with its chronic toxemia on all of the vital organs of the body

and tending to death in from 13 to 25 per cent of cases, that has more particularly engaged the energies of American pathologists and surgeons.

Alvarez touches the point when he says: "There is some cause for disappointment when we consider that in the absence of an especially skilled surgeon, the physician can do little more for the patient, with

edge of the gross pathology, as well as of the clinical manifestations of the various forms, that by examination and interpretation of the symptoms they can determine the type, its prognosis and indications.

MacCarty makes the following simple yet comprehensive, histologic classification:

1. Cystic goiter.
2. Hypertrophic parenchymatous goiter.



II. Exophthalmic Goiter, Right Lobe. Middle Lobe Colloid, Tremor and Mental Dullness. Tachycardia. Operation, February 10, 1911, Marked Improvement.

exophthalmic goiter, than he could in the time of Parry, Graves and Basedow."

The pathologists have greatly simplified and crystallized the morbid changes of the gland and are able by an inspection of its histology to describe the symptoms of the patient from whom the gland was removed. It is very desirable that the surgeon in turn should have such an intimate knowl-

3. Papillary goiter (always causes hyperthyroidism).

4. Hypertrophic fetal thyroid (may cause hyperthyroidism).

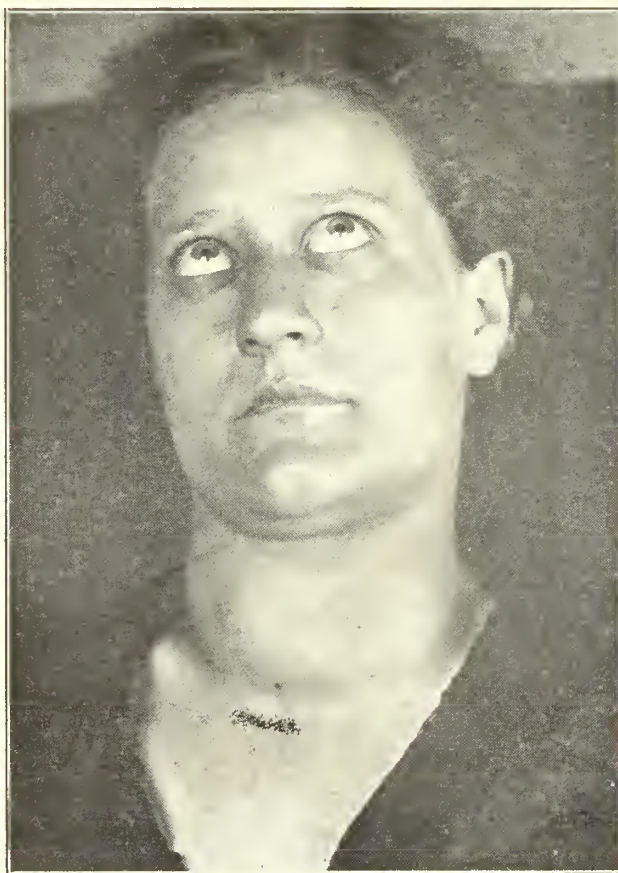
5. Fetal adenoma of the thyroid.

Cystic goiter is the so-called simple, plain or colloid goiter, and has also been called a diffuse adenoma. It may contain many small colloid cysts, but still is a "cystic"

goiter histologically. In its later stages it may be a single large cyst that can be shelled out.

The colloid, or cystic goiter, is the classical goiter. It is the tense, hard growth that is so prevalent and not influenced by iodine. Its size is due to the enlargement of the follicles and the amount of colloid material contained, which is so greatly increased.

tendency to degeneration, occasionally to take on calcareous change. It may be simple or multiple; is often found in the lower horn of one lobe and occasionally in the isthmus. So frequent is the colloid form both in the diffuse and nodular variety, that it is the typical endemic goiter. Cancer has developed in from 6 to 10 per cent of cases coming for operation, according to Crile.



III, Miss B, 19. Exophthalmic Goiter. Pulse 180. Kocher's Sgn. Preliminary Ligation, Both Poles to be followed by Thyroidectomy,

It is easily the most frequent type and may take on symptoms of hyperthyroidism (Graves' disease), which can be accentuated by the administration of thyroid extract or iodine.

The nodular form is most frequently a colloid, circumscribed in one or more portions of the gland. Colloid is thus in the nodulated form, as in the diffuse form, the most common variety. It has a decided

The mono-cystic variety is easily recognized by its smooth appearance, oval or circular form and elastic consistence. It is quite tense and firm and may sometimes fluctuate. The sudden development of sensitiveness and swelling often indicates a hemorrhage into the goiter.

Under microscopic examination, the majority of these forms are attended with dilatation of the acini, which contain col-

loid. The cystic colloid goiter is really the retention of the excess of the secretion in certain conditions, as puberty, pregnancy, etc., where there is a temporary overproduction. The normal lack of absorbents allows a coalescence of follicles of retained secretion by rupture of one into the other, and a cystic colloid goiter results. When a patient has had this form a long time, and

small, rounded tumors in the front of the neck. They are not influenced by iodine, and are easily enucleable without removal of the gland.

Types of goiter are believed by Wilson and MacCarty to be not "types" but "stages" in one process. Thus a goiter with exophthalmic symptoms may have developed from a colloid goiter, which in turn



IV. Miss W., age 23. Exophthalmic Goiter, 2 Years. Note Von Graefe's Sign. Pulse 160-180. Right Superior Thyroid Artery Ligated 5 Days Previously, October 13, 1911. Subsequent Removal of Right Half of the Gland Will Be Necessary.

the secretory function of the gland is almost shut off by pressure, then nature makes an effort to preserve the life of the gland and its function by developing new epithelium and capillary vessels, which results in overproduction of thyroid secretion and hyperthyroidism.

The benign tumor group consists of the fetal and simple adenoma. They are usually

may have resulted from a fetal adenoma. The typical histological evidences of all three may be present in the one gland.

What is the typical change in exophthalmic goiter? Usually a budding or infolding, of epithelium in the acini and a change in the lining cells in most cases. At any rate, there is always an increase of the epithelial masses, and hence of the secreting

power. Instead of one layer of lining epithelium there are three or four.

The cellular arrangement of a normal thyroid is to the thyroid in the earliest stages of exophthalmic goiter as a normal breast is to the lactating breast.

Wilson says, the very early acute cases show pathological hyperemia, and cellular hyperplasia; the parenchyma increase is in direct proportion to the intensity of the

noid type apparently pass through the same changes of hypertrophy and degeneration as those of the papilliferous type (exophthalmic goiter); simple goiter should be regarded as multiple retention cysts filled with non-absorbable secretion, colloid and cell detritus. (Amer. Jour. Med. Sciences, December, 1908.)

Simple goiter, aside from its physical appearances, may give pressure upon the



V. Same Patient as No. IV, 4 Months Later. Gained 20 Pounds. Pulse Reduced 40-60 Beats per Minute.

symptoms; cases which clinically are showing any remission of toxic symptoms, show somewhere more or less evidence of decreased function, such as exfoliation or marked flattening of parenchyma cells and the presence of the so-called colloid-secretion; patients who have recovered from their toxic symptoms and are now suffering principally from long, previously acquired heart or nerve lesions, or from myxedema, show exfoliated or much flattened epithelium and large quantities of non-absorbable colloid; goiters of the ade-

trachea, blood vessels, nerves, etc., and sometimes the pressure is so great in large tumors that the patient is suffocated to death, unless tracheotomy is done. In one such case the late Dr. Porter, of Boston, opened the trachea through the enormous tumor and saved the patient, although the original diagnosis had been cancer; when the tumor was removed later it proved to be benign and it is said the patient is living and well. The dangers of goiter are, therefore, interference with the function of the respiratory tract and the heart; stenosis of

the trachea; hemorrhage into the growth, cancerous degeneration, and the taking on of exophthalmic symptoms. The growth may be intrathoracic and not easily palpable in the neck. If there is suffocation on exertion, or impairment of the voice, the "diving" goiter should be suspected. An X-ray examination may be helpful. The

over, it may be so sudden as to cause death within two weeks after its appearance, as in one of my cases, or to suddenly terminate in the delirium and mania of thyroid intoxication, with temperature of 103 to 106. This dramatic finale occurred in two young ladies, whom I saw at the last, after having gone along two or three years under



VI. Exophthalmic Goiter. Note Kocher's Eye Sign. Pulse 158. Exacerbations 10 and 5 Years Ago, and Now. Awaiting Operation.

"goiter-heart" often produces dyspnea from the pressure on the veins and dilatation of the right heart.

There is no disease which presents more typical symptoms, when fully developed, than hyperthyroidism (exophthalmic goiter), but in its beginning it may be so extremely mild as to be undeveloped or taken for neurasthenia or "heart trouble." More-

all sorts of medicinal and X-ray treatment, which was said to have improved them up to a few weeks before death. Simple ligation or partial extirpation, is so certain in early cases, while medication is so uncertain and often entirely inert, that the early operation is the shortest, safest and surest method of cure. "At last the ghost of the medical treatment of exophthalmic goiter

has been laid." It is the story of appendicitis over again.

Cases presenting the four cardinal symptoms, tachycardia, tremor, goiter and exophthalmos, make the diagnosis absolute. Of these the tremor is the most constant and one of the earliest manifestations. The pulse rate may vary from 90 to 190. The exophthalmos is absent in one-fifth of the cases, and extreme hyperthyroidism may exist without a palpable goiter. Extreme weakness, especially of the knees, is a very conspicuous symptom. Symptoms begin on an average at about thirty and are much more prevalent in women. Indeed, only about 16 per cent of the cases occur in men. The gland is not called upon for the amount of function in man that it is in woman. The disease is, however, much more severe in men, and is more generally attended with pronounced exophthalmos, occurring in over 90 per cent.

The eye symptoms in connection with thyroid enlargement constitute, according to Sattler, of Leipsic, who has done a monumental work on the eye manifestations, the earliest symptoms of the disease.

Van Graefes' symptom is the lagging of the upper lid on looking down; Kocher's symptom is the lagging of the lower lid in looking up; Dalrymple's symptom is an increase of the width of the palpebral fissure caused by the retraction of the upper lid. On looking straight forward, the sclera shows above the cornea. This is frequently called Stellwag's sign, but the genuine Stellwag sign is an infrequent and incomplete voluntary winking (staring). Mobius describes the inability to hold the eye in convergence. Joffroy calls attention to the failure of the forehead to wrinkle on looking up.

There are various skin affections such as bronzing, fleeting and brawny edema; blotchy erythema of the neck and chest; and frequent and profuse sweatings. In acute cases there is irregular temperature of one or two degrees (Basedow's fever). The skin, on account of sweating, increases the electrical conduction (Vigouraux's sign).

The blood shows a relative lymphemia.

Kocher lays much stress upon this blood picture, but it has not been found constant or dependable by Mayo.

The constitutional symptoms of vomiting, diarrhoea, edema, etc., may be marked. These patients are often easily excited, irritable, quarrelsome, melancholy, or maniacal. Mental irritability is extremely important, according to Plummer, in determining the patient's inability to withstand operation at that time.

Exophthalmos alone must not be construed necessarily as a symptom of hyperthyroidism, because it was found that out of thirty-three patients admitted to Johns Hopkins Hospital with chronic nephritis, sixteen had exophthalmos with no apparent affection of the thyroid gland.

The goiter itself, beside certain physical characteristics, may present thrill, bruit and expansile pulsation, and may vary in size from time to time as the result of fright, worry and certain metabolic changes. In hyperthyroidism the continuous chemical poison produced by the overproduction of thyroid juice, affects every tissue and organ in the body. The liver, kidneys and heart exhibit the most marked organic changes.

Of all the medical remedies, which have been tried, none are uniformly efficacious. Even iodine is notoriously disappointing in plain goiter, and like thyroid extract, often increases the symptoms and is dangerous in exophthalmic goiter. It is from the serum treatment that we expect the most in the future. That of Rogers and Beebe is the best and most promising, although it yielded a mortality of 8 per cent in the cases in which it was employed. It seems to do better in the early, soft, pulsating variety; whereas, the old, hard gland undergoing degeneration is made worse by the destruction of its cells by the cytolysis of the serum. Blumenthal says of serum that it must be used for months or years and the improvement may be so slow that the patient becomes discouraged and unwilling to persist in it.

The neutral hydrobromate of quinine has been advised by Forcheimer and used extensively by Mead and Jackson, but it requires from four months to three years, and still the cases cannot be regarded as radically and permanently cured.

Thyroidectin is prepared from the blood of thyroidectomized animals, in which the hypothetical antibodies which normally neutralize the thyroid secretion may be supposed to have accumulated. Dalton reports in detail five well-observed cases treated in the New York Hospital with this agent. "None of which gave results that were greater than the ordinary variation of exophthalmic goiter under the influence of rest, suggestion, and regulation of habits, while in one case the remedy appeared to aggravate the symptoms." He adds that the result of treatment with thyroidectin seemed far inferior to those secured by symptomatic treatment or partial thyroidectomy.

X-ray, while temporarily beneficial, is not regarded by the best Roentgenologists and certainly not by clinicians, a curative measure. In estimating the results of any treatment, it must be borne in mind that about 25 per cent of exophthalmic goiters undergo self-cure, with ordinary care and hygiene.

According to Albert Kocher, any goiter which develops suddenly and grows rapidly, is sensitive to pressure, or where the pressure affects the trachea and blood vessels, or in which heart symptoms occur, should be operated upon. He also advises it in all nodular goiters with degenerative changes, and in diffuse colloid goiter, where iodine has failed to cure after several brief periods of administration.

On the contrary, where there is any serious or cardiac symptoms due to the goiter or concurrent disease of the vital organs operation is contra-indicated. We should be particularly alert for the dilated heart; that occurs in 69 per cent of the cases. Operations in hyperthyroidism attended with insomnia, extreme nervousness, vomiting, muscular exhaustion, rapid and irregular pulse and especially with temperature, should be declined until their condition may

be improved enough by belladonna, rest, ice-bag to the precordia to make the case a good surgical risk. The pulse should be susceptible of being counted continuously to make operation safe. It should never be undertaken because the patient is growing worse. In that stage twice as many will recover from the acute exacerbation by rest and symptomatic treatment as by inopportune operation. More prudence and care must be exercised in determining operations as well as performing them in goiter surgery than in any other field.

Llewellyn Barker, in pointing out the responsibility of the physician, also raises the requirement and exaction of the surgeon when he says:

"A heavy responsibility rests on the physician. Fully as important as the diagnosis of the indication for operation is the choice of the surgeon. The physician should select an operator thoroughly familiar with the anatomy and pathology of the thyroid and para-thyroid glands and skilled in the special technic required. Success depends so largely on the formation of a correct judgment as to the amount of the gland to be removed and as to its removal in one or several operations, that the physician must be sure of his surgeon. Aside from the dangers of tetany, if too much gland is removed, hypothyroidism will result and the patient be doomed to thyroid-eating or an implantation; if too little (a less serious matter) more of the gland can be taken out later. One thing seems established, that in exophthalmic goiter the symptoms retrogress in exact conformity with the amount of thyroid extirpated."

Cystic goiters are easily enucleated by the Billroth method. They often shell out of their capsules easily and the remaining healthy gland is sewn over the cavity.

In large colloid tumors extirpation of the larger lobe with resection of the opposite side, is indicated.

In mammoth enlargements resection of both sides is performed by the method of Mickulitz.

In exophthalmic goiter the early cases that may be temporarily benefited by medi-

cinal treatment are more effectively relieved by ligation of the superior pole, including the thyroid arteries and veins, thus reducing the blood supply. Under those circumstances, the gland frequently reverts to the simple form and the patient is quickly, safely and permanently cured.

In very acute, severe, recurring or long standing cases, with irregular pulse, etc., ligation as a preliminary to the subsequent removal of the gland, is a very promising method. It frequently converts a severe case, which would be unable to stand resection of the gland, into one that is so greatly benefited that removal may be deferred a few months, until all immediately threatening symptoms have abated and the radical operation can then be done with greatly increased safety. Mayo has increased the life-saving scope of surgery in these cases by the popularization of this method, originally suggested by Wolfler. He advises it shortly after an acute exacerbation, when the gland has discharged all of its poison, so to speak, and before it has time to become recharged. The opposite pole should be ligated, if necessary, under cocaine, in about five days. If, however, the patient is in good condition and shows no reaction from the first ligation, the affected lobe may then be extirpated with safety.

In the radical curative operation for the removal of from one-half to two-thirds of the largest lobe, which is usually the right lobe, because it is anatomically slightly larger, the subcapsular enucleation described by Mayo has great advantage in the control of the blood supply, the avoidance of the recurrent laryngeal nerve and the parathyroids which are left behind the capsule unseen and untouched. It is very important that we work from above downward, and sponge all the "moss" away from the shiny capsule proper, leaving behind the fibrous or "surgical capsule." The sterno-hyoid and sterno-thyroid muscles should be cut, if necessary, near their upper insertion. It not only prevents injury to the hypoglossal descendens and communicans, but allows

easy access to the superior thyroid artery. As the nerve runs vertically, it is well to apply artery forceps vertically as transverse clamping may injure the nerve. Temporary impairment of the voice is frequent, but transitory. By lifting the lobe up and by working from above downward a careful preservation of the posterior capsule will be easily completed.

The mortality in all grades of exophthalmic goiter in the hands of a skillful surgeon is under 4 per cent, while that for simple goiter is $1\frac{1}{2}$ of 1 per cent.

Seventy per cent are cured, 89 per cent cured or greatly benefited, and 94 per cent are cured or somewhat improved, according to Mayo. Kocher reports 83 per cent as cured.

In estimating the end result, one must consider the extent of permanent changes in the great organs, such as fatty degeneration of the heart, liver, kidneys and nervous system. The toxic effect of the disease may have crippled permanently these important organs and functions, and while the operation may check the toxemia the result, as Mayo says, may be compared to that following the removal of a bullet from the neck, without removing the damage done by its passage through the body.

In these advanced and delayed cases with permanent and forbidding terminal changes in all the great organs, it is better to let the patient die a medical death than to ask surgery to do the impossible.

In England goiter is regarded as a medical disease, because the surgical mortality is said to be 40 per cent. One-tenth of this only is a legitimate surgical mortality, and the remaining 36 per cent is the medical mortality of indecision and delay.

APPENDICITIS WITH CONCURRENT TYPHOID FEVER.*

BY WM. D. SUMPTER, M.D., NASHVILLE, TENN.

Although Jadelot as early as 1808 called attention to the condition of the appendix as a complication in typhoid fever, no further cognizance was taken of the subject

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until 1848, when Vecchi reported the finding of an autopsy on a typhoid case as perforation of the vermiform appendix. In 1853 Heschl, in recording typhoid fever with perforation, tabulated 56 cases, in 8 of which the perforation was in the appendix. Buhl, in 1854, reported 3 fatal cases attributable to this cause; Morin, in 1867, 64 cases, 12 of which were appendiceal; Church, in 1881, 21; 3 in appendix; Fitz, in 1891, 165; 3 in appendix; Cushing, in 1899-1900, 20; 2 in appendix (Kelly). Post-typhoid complications of the liver, and gall bladder, kidneys and urinary bladder and appendix have often been observed, but the appendix is the only one of these organs likely to be involved during the attack. Several explanations of this coincidence have been offered; that a chronic appendicitis may be made to assume an active condition by the disease, that the involvement of the lymph follicles and ulceration in the appendix may be the causative factor in producing an acute attack; the latter supposition being considered very much less likely than the former. Be the etiology what it may, whether in these cases typhoid and appendicitis are independent of each other or related, we have abundant evidence of the involvement of the appendix during the course of that infectious disease. Kelly says: "I have myself investigated the subject by collecting from literature, from hospital records, and from personal communications 30 cases, reported in more or less detail, in which the condition of the appendix during typhoid fever was demonstrated by operation or by autopsy in most of which there had been symptoms of appendicitis during the course of the typhoid. In five cases the microscope gave evidence of typhoid ulcers within the appendix; in one there was ulceration without perforation; in ten perforation; in one appendicitis with abscess; in four a simple congestion with a perforation situated in the ileum, and in the remaining seven there were adhesions, flexions and obliterative changes."

The contiguous relation of the ileum to the appendix is productive of congestion,

and a swollen condition of that structure, and its lymph follicles in the course of typhoid fever, and perforation of the ileum, and also the appendix have been found associated at autopsy. The determination of appendicitis complicating typhoid fever is of great concern and presents a difficult problem. The differential diagnosis of appendicitis is a matter oftentimes of great perplexity, despite the definite classical symptoms as observed in an ordinary attack. Gastro-intestinal pain (colic or inflammation), enteritis (bacterial or mineral in origin), acute colitis and accumulated fecal masses in the caecum, acute pancreatitis, rupture of gastric or duodenal ulcer, pneumonia, malaria, liver and gall-bladder conditions, renal colic, movable kidney, typhoid fever, etc., are considered by Stengel (Osler's Modern Medicine) as sufficiently simulating appendicitis at times to a degree that makes their diagnosis from appendicitis extremely obscure. Operations for appendicitis have been many times performed with such mistaken diagnosis, and a normal appendix removed.

Stengel says: "The intestinal conditions of the early stages of typhoid fever may simulate appendicitis, especially in those instances in which the ulcers are closely grouped about the caput coli. Rigidity of the abdominal walls, marked local tenderness and tumefaction occur in these cases, while fever and the general constitutional symptoms at the onset resemble those of many cases of appendicitis. To add to the confusion, there is, in a certain number of cases of typhoid fever, an early involvement of the appendix, with the development of specific typhoid lesions in the lymphoid tissues of that structure. Such cases of course present peculiarly, puzzling clinical manifestations." It has been stated that "there is a certain degree of physiological sensitiveness in the ileo-caecal valve," evinced in exaggerated form in nervous mimicry of appendicitis, which sometimes occurs in neurotic individuals, and we are often almost persuaded on determining a general tenderness over the lower abdomen to accept typhoid as a diagnosis with a

due regard to a disproportionate pain in the region which Cushing is pleased to designate "a quiet corner of the abdomen."

The onset of appendicitis is so frequently characterized by indeterminate, referred, non-localized pain accompanying that in the iliac fossa that we are unable to make a definite diagnosis for a few hours, employing enemata, the ice bag, etc., while awaiting symptoms of a specific localized pathology—pain, tenderness, rigidity, etc., at the site of the appendix with concomitant constitutional disturbances, and when the ileum is involved with typhoid inflammations, the diagnosis is, of course, more obscure. The leucocyte count is a valuable aid at times in differentiating between acute appendicitis and typhoid, increasing leucocytosis present in the former, decreasing in the latter condition. The Widal reaction may be of service, but as it does not respond often before the seventh day of typhoid, and may be deferred until the fourth or sixth week of the disease, its absence does not eliminate typhoid as the affection present. Typhoid fever in the early stages has been mistaken for appendicitis much more frequently than appendicitis for typhoid. It would appear from operation and post-mortem observations that could autopsies be held on all fatal perforation, typhoid cases, it might reveal many instances of appendiceal involvement not recorded. Kelly says: "There seems to be no defined set of symptoms which can be denominated pre-perforative. The physician must always, of course, give the closest attention to any unusual complaints of pain in the right iliac fossa occurring during typhoid. When a perforation occurs there is apt to be a sudden acute pain accompanied by a fall in temperature. The sudden defervescence is also noted in hemorrhage, but without the pain. Intestinal hemorrhage occurred in four out of ten cases of perforation of the appendix several days before perforation took place, the pain coming on with the perforation." Fitz observed that symptoms of perforation with appendiceal pain, etc., were more favorable

cases than those without it. The fact that perforation is to be given serious attention. Unfortunately the operative results of appendicitis during typhoid fever are far from being satisfactory. Kelly says: "In a case of suspected appendicitis with an alternative diagnosis of typhoid fever the wisest course is to wait. The best general rule is not to operate for appendicitis in the early stages of typhoid fever, say, up to about the tenth day, in the absence of exceedingly urgent symptoms; give the patient the benefit of the doubt and watch closely. The clinical history of collected cases seems to show that with rarest exceptions there is no more occasion for operating upon a true typhoid appendix than there is for cutting down upon the ileum and excising the affected Peyer's patches."

J. B. Murphy says: "It is my opinion that typhoid appendicitis should not be operated upon unless there is a perforation. All my cases recover, those operated and not operated. At the same time I feel that operation should not be performed except in special cases."

The condition is one of gravity to the physician or surgeon in attendance, and should have his closest attention. If operation is demanded, careful examination of ileum and appendix should be made.

It is not my purpose to present an exhaustive consideration of the coincidence of typhoid fever and appendicitis. Such details may be found in the excellent chapter, "Appendicitis in Typhoid Fever," of Dr. Howard A. Kelly's book, "The Vermiform Appendix and Its Diseases," to which I am deeply grateful for much of the data and material herewith submitted. The literature elsewhere on the subject is conspicuously meagre, as any surgical library will attest. The instigation of this paper was a recent case of appendicitis with subsequent typhoid fever coming under my care.

E. L., female, age 15 years. On Friday, March 10, 1911, had attended school and felt perfectly well. On Saturday at noon

had a mild colicky disturbance in the abdomen and vomited. Was given purgative by mother. On Sunday morning, March 12, the pain was still present (not severe), and I was called to see her. I found her temperature 99 1-5 degrees F., pulse 80, no nausea, bowels had acted well, tenderness and pain at McBurney's point, with diffused pain over the abdomen. Enemeta ordered, ice bag applied, and mother instructed to advise me of any increase in temperature or severity of pain. The report to me at 6 p. m. was temperature 101 degrees and pain which was very severe. Soon thereafter, with Dr. W. H. Witt in consultation, an operation was deemed imperative and promptly performed that night. It revealed an appendix whose distal end was gangrenous for 1½ inches, projecting from the external lateral aspect of the caecum. The proximal portion was 3 inches long, no induration but so intimately bound to the large intestine that dissection of the mucosa and submucosa from the serosa and muscular coats was necessary. The wound was closed with drainage. The usual surgical fever supervened and on the third day after evacuation of the bowels by a purgative enema the temperature was 99 degrees F. On the fourth day the morning temperature was 99.2 degrees, afternoon temperature 101.1 degrees F. On each succeeding day it registered 99 degrees F. Pulse ranged from 90 to 108. On the eighth day, although no evidence of stitch hole abscess or other apparent pathology referable to the operation could be discovered, but fever continued. The wound was in an ideal condition.

From the third day after operation, though suffering no pain, the patient was more or less apathetic; the abdomen though soft at the epigastrium, was distinctly tympanitic, but no marked tenderness was elicited on pressure; no sore spots were evident. Anorexia and dry lips and tongue were present, and their parched condition was sufficient to cause discomfort on opening mouth. Some insomnia was attendant, but no headache at any time. These symp-

toms suggested typhoid fever and examination of the blood gave a positive, rapid Widal reaction in two tests. The course of the fever continued with defervescence gradual, and for the past week temperature has been normal. The drainage wound is about healed, and patient is making satisfactory convalescence. The fact that there were no prodromal symptoms as malaise, headache, etc., before the attack of appendicitis, is interesting. The typhoid appeared concurrent with the occurrence of the appendiceal condition. It may be that the case was one of typhoid ambulans, which excited a chronic appendicitis to activity, but not the slightest history of a previous attack could be obtained. Symptoms of typhoid certainly did not appear until after operation. The distal end of the appendix was distended with thick pus and was so near rupture that after the operation in handling it pus oozed spontaneously from its wall. The proximal end appeared normal except for adhesions. That it may be clearly demonstrated that this appendix was not a typhoid appendix I have the specimen at hand for your examination.

Typhoid followed by appendicitis has been reported many times, but any appendicitis with concurrent typhoid is infrequent. Kelly says: "I have met with two cases in which typhoid fever has followed operation for appendicitis, and I here give a brief account of each, as they seem to be extremely unusual." In his first case the temperature fell to normal on the sixth day; then continued to rise, and on the twenty-third day death occurred from hemorrhage. In the second case, typhoid occurred three months after operation—patient recovered.

This case is not reported because of its rarity, but to call attention to the importance of closer observation to the symptoms of appendicitis in typhoid fever, as well as those of typhoid fever after appendicitis.

DISCUSSION.

Dr. John A. Gaines, Nashville.—I failed to hear all of the doctor's paper, but I had experience with one case similar to that which he has reported. The

patient was a young man, of Jewish nationality, twenty-three or twenty-four years of age, who had been suffering with intestinal infection for some time, and came down with an acute attack of appendicitis, typical in character. I operated on him, removing the appendix, which was very much congested, and showing an appendiceal inflammatory condition. After the operation his temperature reached normal the second day, with a little rise of one-half degree or a degree, as we usually see it in these cases. On the fourth day the temperature was nearly normal and remained so until the eighth day, when he had a rise in temperature, which gradually went up and ran a typical typhoid course, and he continued throughout twenty-one days as a case of typhoid fever, with typical reaction, and every other indication positive. In that case I did not preserve the appendix, therefore I could not have a microscopical examination made of it to know whether the primary infection might have been in the appendix, but he had an acute appendicitis, as was very evident, and after the removal of the appendix, his temperature was normal for about five days, then he had a typical case of typhoid fever. I believe the condition is unusual. It is the only case I have observed, and yet I can see no reason why, when typhoid fever is prevalent, a patient could not have a complication arising after appendicitis, and as the essayist has said, we not infrequently see accounts of appendiceal involvement during or following typhoid fever.

Dr. E. A. Timmons, Columbia.—I wish to report two cases, or patients, who died with intestinal perforation. However, there was no indication of any local perforation in the neighborhood of the appendix, yet in each one of these two cases, owing to the intense swollen condition below the appendix, which seemed to have been inflamed, with the inflammatory reaction produced by the disease extending down in there, the result was fatal. I think in a great many cases of typhoid fever we have an appendiceal inflammatory action from an extension of the inflammation downward. In one of these cases I opened the abdomen for another physician whose patient it was. The perforation was nearer the junction of the appendix with the cecum, and that especially was swollen considerably more than in the other case, because the perforation of the former occurred some distance from the junction, upward with the cecum.

Dr. Sumpter (Closing).—I am very glad to have heard Dr. Gaines' report of his case. I think all of these cases should be reported, and I am satisfied there are a great many more men who have observed them, but have not reported them. There is one thing in connection with these cases, and that is, the diagnosis of appendicitis with typhoid is not easy. I have seen attacks of pneumonia which had every symptom of appendicitis. The appendix is not understood, I am sure, by all of us thoroughly, and possibly will never be, but the point in this paper was to bring about some discussion with reference to ap-

pendicitis complicated with typhoid fever. The appendix is thickened and swollen in typhoid fever. Many of these typhoid appendices have been taken out, but at the same time this is not a report of typhoid appendix, but a report of a case of appendicitis apparently independent of the typhoid condition. The peritoneum about the appendix was not thickened except the gangrenous portion of it. I think we should study these cases very carefully, because I do not feel we realize that the appendix may be perforated in a great many of them. This case was of unusual interest to me. I had never paid very much attention to the appendix in typhoid fever, because I felt it was naturally tender, but we should keep in mind these conditions and be on the lookout for such an occurrence, for if in a case of appendicitis typhoid fever should ensue and we should let the patient get about too early, we could easily subject that patient to a possible hemorrhage.

THE TREATMENT OF SYPHILIS.*

BY W. FRANK GLENN, M.D., NASHVILLE.

It is interesting to note how nearly we approached the proper remedies for the treatment of syphilis, years before the germ of this disease was discovered, or the so-recently-hoped-for "Balm of Gilead," Salvarsan, was introduced. Twenty-five years ago I taught that syphilis was due to a specific virus which was capable of affecting any tissue in the body. We also taught that we had only one medicine which was antidotal to the syphilitic virus, namely, mercury. We also taught that iodine was not an antidote to the syphilitic germ, but aided the action of mercury by keeping it in a state of perfect solution throughout the entire system, thereby insuring its full action and constant elimination. We further taught that where skin lesions or even nerve lesions were obstinate to mercury with iodides, a most satisfactory result could be obtained by adding Fowler's solution of arsenic to the mercury and iodide.

It is with much satisfaction that I recall many apparently marvelous cures accomplished by the administration of mercury, iodide of potassium and Fowler's solution combined. After the discovery of the *Spirocheeta Pallida*, it was soon proven that mercury in the form of calomel ointment, thoroughly applied to the point of inoculation in monkeys, would invariably prevent the appearance of chancre or any future

*Read before Tennessee State Medical Association, April, 1911.

manifestations of syphilis. It was thus scientifically demonstrated that mercury is an antidote.

I would here impress upon your minds the fact that failures in treating with mercury and iodine have been due to haphazard, unscientific and routine methods of administration of the remedies. It is not enough to say, "Give mercury for syphilis." To get its full benefit, which is in many cases most wonderful, it is necessary to consider carefully many things. The particular preparation of mercury which is best suited to an individual case, the manner of its introduction into the circulation, the proper dose for each patient, the correction of concurrent diseases or existing conditions or habits which tend to lower the vitality of the patient.

In other words, the patient undergoing a course of mercury must observe such rules of hygiene as will keep his blood and nerves to as near a normal standard as possible. He must absolutely abstain from all alcoholic drinks; he must use tobacco very moderately, better none at all. His bowels should be regulated; his skin should be kept in good condition by hot baths; his teeth should be cleaned, decays filled, and afterwards kept cleaned. In other words, everything must be done during the time set aside for the eradication of syphilis to keep his system as near to normal physical condition as possible.

As to the proper preparations of mercury and the methods of administration, I cannot too heartily condemn the routine practice of general practitioners, at least the vast majority, of giving the proto-iodide tablets. After many years' experience with various preparations of mercury, I feel sure that we can hope for less good from proto-iodide than any other preparation. Did time permit I could relate many interesting failures of ready-made, proto-iodide pills, where other preparations of mercury properly administered, succeeded well. As to the method of administration, I have been fully convinced for some years that we get a better effect from any medicine used hypo-

dermically than by the stomach. At the present time, therefore, I never give mercury any other way if at all possible. Again, I am positive that after the system is brought well under the influence of mercury, better results are obtained from its intermittent administration, than from its continuous, uninterrupted use for two or three years. When all of these things are carefully considered and carried out, when the physician guides his patient over the sea of syphilis with the same scientific watchfulness that the mariner steers his ship across the ocean, we get as brilliant and satisfactory results with mercury as with any remedy known.

Again, since Ehrlich has introduced his Arseno-Benzol, it has been scientifically proven that arsenic destroys very rapidly the germ of syphilis. So we see that while we had only clinical medicine to guide us unaided by the microscope or the Wasserman blood test, that we were on the right track in using mercury, iodine and arsenic as the only medicines in treating syphilis. Today, in the light of scientific proofs, the same remedies stand out alone as the only weapons in our hands to combat the dire and baneful effects of this most dreadful malady. When Ehrlich announced the effects of Salvarsan (606) to the medical world, it at first seemed as though we had a remedy with which we could destroy all of the spirochetes with one full dose. But alas to our ardent hopes, we now know that one dose will not effect a permanent cure in every case. Yet no remedy has been used for syphilis that will so quickly cause its lesions to disappear. Its action is in many cases little short of miraculous. If the spirochetes should reappear a second, a third or fourth dose may be used, thereby insuring the absolute eradication of the disease from the system. With Salvarsan we can with absolute confidence say to the spirocheta, "Thus far hast thou gone, but no farther shalt thou go."

We are often asked by patients as well as physicians if it is not a dangerous remedy. I can answer that no better than to repeat

my answer written to a patient in Florida. My answer was this:

"Morphine is dangerous, chloral is dangerous, strychnine, chloroform and cocaine are dangerous, when used improperly. But when used properly and on the proper subjects, they are not dangerous, but are capable of producing great good. The same may be said of Salvarsan."

I have heard of two deaths produced by it in two neighboring states. Yet the fault was not with the remedy, but with the doctor. In one case the full adult dose was properly prepared in the afternoon and one-fourth of it used on a child. The remainder was set aside and used on a man the next afternoon. Result—cure of the child, death of the man. In the other instance the doctor boiled the Salvarsan in a tin pan, which caused a chemical change in the compound which produced death in the patient. In order to get the brilliant results of this wonderful remedy it must be prepared properly and used at once. And again it must be used only on properly selected cases. Persons affected with diseases of the optic nerve, or serious organic lesions of the heart or kidneys, are not proper subjects on which to use this remedy. Yet our old, reliable, tried and true friend mercury can be used under all circumstances. So while we formerly had practically to rely on mercury for the final cure of syphilis, we have now another most potent remedy to place by its side.

There are, in my opinion, two types of cases in which one full dose of Salvarsan will accomplish a permanent cure. The first are those cases we see immediately after the appearance of the chancre, before the system is thoroughly and completely saturated with the spirochetes.

The second class embraces those cases which have had a proper course of mercury extending over a period of two or three years, and in which there is still a trace of the poison, as shown by the Wasserman test. Yet in those cases where the disease is flourishing in its well advanced secondary stage, I believe it will require usually two, three or maybe four doses to effect a per-

fect cure. I realize fully, however, at the present time our opinions can only be conjectural, and that time alone can prove how correct they may be.

While we may not be able in every instance to completely cure syphilis with one dose, yet I believe that with Salvarsan and mercury in our hands we can place our heel upon the head of the serpent and hold him there inert until the last quiver of its caudal extremity indicates its certain death.

In conclusion, I will state that I would not willingly abandon entirely the use of a remedy which has been a sheet anchor for almost four hundred years; at the same time I regard Salvarsan as a very great addition to the therapeutics of syphilis, and truly a boon to humanity.

SALVARSAN AND THE WASSERMAN REACTION IN SIXTY CASES OF SYPHILIS.*

BY WM. LITTERER, A.M., M.D., NASHVILLE.

Perhaps no other discovery has created such universal interest in so short a time as the remarkable announcement of the Ehrlich-Hata remedy for syphilis.

The earlier reports on the efficacy of Salvarsan were so glowing that its action promised to be that of a harmless and magical specific. Many believed that the millennium had been reached so far as the cure, prevention and eradication of that protean disease was concerned. Recently the pendulum has swung the other way; a sound reaction has taken place, and the new remedy, Salvarsan, now bids fair to take its proper place in the list as a result of scientific study of many thousand cases of lues in all its phases. But the complex and manifold nature of the matter under investigation will necessitate the gathering and correlation of a mountain of data before a just and accurate verdict can be reached. Numerous important problems are discussed which deal particularly with the specificity and toxicity of the remedy; the dosage, as to size, repetition, reaction and relation to conditions and different stages of the dis-

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ease; technique of administration, the indications and counter-indications, the study of the Wasserman reaction and many other important factors which have been given considerable investigation.

It is not within the province of this paper to attempt a solution of the many new problems which this therapy has introduced, but will content myself with the discussion of the effects of the new remedy on the Wasserman reaction.

The determination of the immediate efficiency of this form of treatment is based on the Wasserman reaction becoming negative within a reasonable length of time after the injection. Usually in about five weeks. An idea of the efficiency of Salvarsan can best be given by recording a brief summary of the results of the Wasserman test in some of the clinics in which this treatment was first carried out.

There exists in the literature such a discrepancy on the results obtained in the serum reaction that no satisfactory deductions can be made. Many cases have remained strongly positive for weeks even when the clinical effect is obtained.

Hugel ventures the opinion that a negative reaction becomes positive quicker than after mercurial treatment. Wechaelmann reports a negative result in the majority of his cases in from one to seven weeks, mostly, however, after four weeks. Schreiber and Hoppe found 84 per cent of their cases negative after fifty days; this was increased to 92.3 per cent after longer observation. One case became negative as early as forty hours, another four days, and still another after six; the majority, however, after fourteen days. In one case seventy days elapsed before a change took place.

In Isaac's twenty-seven cases, although there was regression of symptoms, all remained positive except two, one of which became negative after six weeks. Neisser's results were 44 per cent negative with the Wasserman method and 19.2 per cent with Stern's modification, the average time being between twenty and thirty days. Jerome gives 60 per cent negative; Treupel's cases

became negative in from seven to sixty days. Gluck reports one-third of his cases negative after from thirty-five to forty days; Iversen in from twenty to forty days, two as early as the eighth and tenth day; Michaelis from two to ten weeks. Herxheimer's results were follows: Twenty-one chancres; three positive before treatment; of these two became negative after seven and twenty days respectively. Four negative before treatment, became positive four, six, nine and twenty-eight days after injection. Secondary lues: thirty became negative after treatment, five in from one to two weeks; of these four became positive after from one to one and a half weeks. Sixteen remained positive; four which had been negative before treatment remained so; of seven latent cases with positive reaction, three became negative in from eight to fourteen days.

Kren's results show the Wasserman reaction negative in from four to five weeks. Of his cases two became negative after one week, two after two weeks, two after three weeks; two cases negative after six weeks, one after seven weeks, and three remain positive after eight weeks. Seventy-eight of his cases were treated with neutral emulsion, forty-five with slightly acid emulsion. He had four initial lesions with positive Wasserman; three without secondaries, one with slight secondaries. All four became negative in one to two weeks.

AUTHOR'S CASES.

In studying the effects of the Wasserman test in the sixty cases in which the Salvarsan had been given, I have deemed it advisable to formulate certain cases into groups since different degrees of Wasserman's were recorded, different modes of administration and different stages of the disease in which the drug was administered.

Seventeen primary, six intravenous. Five showed Wassermann positive before the injection. After the administration four were negative four weeks after. Two relapses have occurred in two months time which were cleared up by an intragluteal injection.

Eleven intragluteal. Eight showed positive Wassermanns before injection. The remaining three were too early for the test. Five out of the eight caused an obliteration of the reaction in six weeks' time. Three reappeared within three months. The three cases at first showing negative Wassermanns still show negative after seven months' standing. No Hg. has been given these patients and all appear to be perfectly well.

Sixteen secondaries, mucous patches, etc.

Four cases intravenous. Four weeks afterwards caused a Wassermann negative in two, which later became positive in one month. An intragluteal caused a negative in two weeks, which has not reappeared in six months. The other two cases caused a negative reaction in eight weeks, but in four months the two showed up positive.

Twelve intragluteal cases. All positive Wassermann. In seven a negative Wassermann was produced within six weeks. Four out of this number returned a Wassermann in four months with no symptoms. The three remaining were Wassermann negative in five months' time. In five the Wassermann was not affected by the first dose, but the second administration caused its obliteration in three cases. The other two, the Wassermann was not wiped out by the third injection, although all symptoms had entirely disappeared.

Eight locomotor: Five Wassermann positive before giving Salvarsan; three Wassermann negative before giving Salvarsan. Three of the five Wassermann positive cases showed a negative reaction after two injections of an interval of six weeks. One became positive in about three months after the last injection. In two cases at no time showed an obliterated Wassermann notwithstanding the administration of three doses of Salvarsan. These two cases were not benefited in the least by the drug, while in the other three fairly good results were obtained. In three cases showing a negative Wassermann before the injection of Salvarsan, but giving a definite history of a previous syphilitic infection, were given

intragluteally, a large dose, .6 gram of the drug with the result that in one week two of the patients showed a feebly positive Wassermann, which disappeared two weeks later. The other patient showed no reappearance of the Wassermann. The explanation of the temporary return of the Wassermann has been surmised by some to be due to the rapid killing of the hiding-out spirochetes, which were not in sufficient number to produce a Wassermann while living, but will do so when they are dead and disintegrated. No permanently good clinical results were obtained in the last cases.

Fourteen malignant lues where Hg. and iodides failed. All showed positive Wassermanns in spite of treatment with anti-syphilitic remedies. Ten were obliterated in six weeks by intragluteal of Salvarsan. The remaining four were given another injection, which resulted in obliterating two cases, while the remaining two were unaffected by a third dose, yet symptoms disappeared.

Three failures. Proved to be syphilitic clinically and Wassermann positive: Obtained no results clinically by two doses of Salvarsan.

Remarks.—Many of the above cases showing an obliterated Wassermann at the present time will undoubtedly become positive a few weeks or several months later. In observing the general action of Salvarsan I was impressed by the remarkable tonic effect of the drug in the majority of the patients. From three to five days after treatment a decided improvement in appetite, color and general appearance was noted. I agree with Corbus when he says that the longer a patient has been infected with the *Spirochoeta pallida*, the less chance is there for a speedy cure. In his large number of cases, notwithstanding the fact that symptoms disappeared, after a single injection the Wassermann remained positive in practically all that were infected longer than six months; and he states that any physician who tells a patient that one injection is going to rid him of syphilis for-

ever, is guilty of gross deception. To give a patient one injection and permit him to wait, is clothing him with a false security, as his symptoms will surely return unless some other form of treatment is added. At the present writing Corbus is re-treating all his patients in the fifth or sixth week. In those that have gained a negative Wassermann reaction, he continues the treatment with mercury until such a time as he feels justified in injecting the Salvarsan a third time. By so doing, he is not only holding the advantage gained by the action of Salvarsan, but is continuing the treatment to the best possible advantage. Neisser says that in the present enthusiasm over Salvarsan we seem to forget that we were ever able to cure syphilis with mercury, and he suggests that we use mercury as an ally to Salvarsan. Even Ehrlich says that the best way to combat the disease is by different kinds of treatment, the same as a general would attack a hill "from all sides."

The biologic management of the patients after treatment with Salvarsan is of the greatest importance if we wish to carry them to a successful termination. In fact, it is the only method available of controlling the disease before external manifestations occur. A patient in whom the reaction persists after treatment must be considered as not cured. If the reaction disappears we have to differentiate between two possibilities; either we have a true cure, which is indicated by the lasting disappearance of the reaction, or, on the other hand we may be dealing with a transitory negative phase, due to the fact that the remaining spirochetes are so diminished that those still left are not able to produce a reaction, and when they have again increased in number a positive reaction will again occur. This positive relapse without external manifestations is an indication for further treatment.

CONCLUSIONS.

1. The consensus of opinion now is that a single injection has in favorable cases approximately the same result as a four or five months' treatment with mercury.

2. It seems to be of particular value in

malignant precocious syphilis, in threatening destructive processes, and in cases that are refractory to mercury.

3. There seems to be no uniformity between the disappearance of the Wassermann reaction and in the improvement of the patient.

4. In a number of instances relapses could be detected by the Wassermann test before clinical symptoms manifested themselves.

5. More favorable results can be expected in a beginning tabetic showing a distinctly positive Wassermann than in one in which a slight reaction appears.

6. In the majority of instances administration by the extravenous (intragluteal) route should first be instituted, since it is the safest method. Should the patient not become Wassermann-negative, the intravenous route may be resorted to.

7. In my series, after a single injection, 35 per cent resulted in a negative Wassermann in six weeks' time. Out of this number 15 per cent showed a positive test in three months, while an additional 6 per cent recurred two months later.

8. A final opinion as to the permanence of its action can only be given after a lapse of several years during which time both clinical manifestations and Wassermann reactions must be carefully observed.

A SIMPLE METHOD OF GIVING SALVARSAN INTRAVENOUSLY WITH REPORT OF CASES.*

BY EDWARD T. NEWELL, M.D., CHATTANOOGA.

For the past six months the medical journals of this country and Europe have printed articles on Salvarsan. They are full of overflowing with divergent opinions as to its indications, dose, mode of administration and effects. Now that this drug, 606, Salvarsan, or better dioxy-diamido-arsenobenzol has been given in upwards of 80,000 cases, it seems but natural that we should at least have become acquainted with its effects and proper administration. However, any one who has not given it, or seen it given, and who has read of the great

difficulty of making up the solution, and the special technic it requires to give it, must naturally feel very reluctant about doing either.

I must admit that when I first read of the many complications following its use, that it required an experienced chemist to make the solution and a surgeon to administer it properly (intravenously) I was quite certain that nothing short of a visit to one of the large medical centers in the East, or a trip to Europe, to get it first hand, would do before attempting its use. Along with this, you read of the special equipment and apparatus for mixing and administering it—the special sterilizer, graduated cylinders, beakers, agate mortar and pestle, dropper bottles, glass balls, rods, etc. You were further advised to use special tanks, cut-offs and platinum needles, and last comes the different modes of apparatuses. So many, so complex and complicated. It seems that the mechanical ingenuity of the profession has been drawn upon to make these complicated apparatuses. One authority will advise the Thesico-Patten outfit for intravenous infusion; with it you get perfect results, without it you introduce air (embolism) or germs (infection) or let some of the solution in cold (blood clots) or some other solution comes in contact with an atom of the tissues outside of the vessel, causing a slough, etc. Quite a few others recommend the Pressure outfit of Heidingsfeld or the one used at the Rockefeller Institute, and so on.

A great diversity of opinion exists between what is known as the gravity method and the Pressure method.

Next comes the difference of opinion in regard to the method of dissolving the Salvarsan. Some rub it up in mortar with water, while others simply place the Salvarsan in a flask, add 30 to 40 cc. of water and put in a few glass balls and agitate.

Another matter in which so many who have used Salvarsan differ is the manner of introducing the solution in the vein—the open method, or puncture through skin and vein wall.

It is not within the scope of this paper to go into the chemistry of this extraordinary drug or the indications for its use. I shall confine my remarks to its application and immediate results therefrom. The more simple and easily applied any apparatus or technic is, the more useful and serviceable it is, provided the desired results are obtained.

It is with this idea in view that I write on this subject. The several apparatuses that are in general use, while they produce the required results, are to my mind too complicated, and require too much time and attention to use them skillfully, not to mention their costs.

Before going into the method I use, I want to state my views on the three cardinal points on which there is such diversity of opinion.

1. In regard to using a mortar, or glass balls in the mixing flask to assist in dissolving the Salvarsan. I have never used either. It is entirely unnecessary. In fact, it is dangerous. The reasons are obvious—increased liability to infection on the one hand and the possibility of fragments of glass being broken and introduced into the circulation on the other. I grant you this accident can be overcome.

When six-tenths of a gram of Salvarsan emptied direct from the ampule into a flask, and then 30 to 40 cc. of warm sterile, distilled physiological salt solution is added, with a moderate amount of agitation, a perfectly clear straw-colored solution will be produced. Occasionally after the Salvarsan goes into solution you will find at the bottom of the flask a small globule of gelatinous matter. This can be left in the bottom of the flask when the solution is poured out. I repeat, it is not necessary to use a mortar or glass ball.

2. In regard to the gravity or pressure method, I use the gravity. In it you simply have a receptacle to hold the prepared solution with tube and needle attached thereto. It is entirely under your control. You can make the solution run fast or slow by elevating or lowering the receptacle, and

need no assistance. There is nothing to get out of order. In fact, it has the same advantage over the pressure method that the fountain syringe has over the old discarded pump syringe

3. In regard to puncturing the skin and vein wall with the needle, or dissecting the vein out for half an inch, I always expose the vein. You have it in plain view and can unquestionably insert the needle into its lumen better than by plunging it through the skin and anterior vein wall. I believe that some of the reported sloughs following the intravenous method are due to the needles not being properly inserted, the Salvarsan escaping into the surrounding tissues. I would not do a subcutaneous ligation for varicocele, neither would I puncture a vein subcutaneously for the introduction of Salvarsan.

The apparatus necessary to give Salvarsan is as follows: One white enameled pan 10 inches across by 6 inches deep, one quart enameled pitcher, one pint graduate, graduated in cc. and ounces, one quart flask, one quart glass cylinder with 50 cc. graduations on it, one piece of tubing, simple cut-off and a 20 gauge needle, one and one-half inches long. This, with bath thermometer and a five-cent dropper, completes the outfit.

Briefly the solution of Salvarsan is prepared and given as follows: Place all of the above named articles save the thermometer in the enameled pan, cover with distilled water and boil for five minutes. The pitcher should have a pint of distilled water in it, and should be placed upright in the pan. This is the water to be used in making the solution. The pan and contents are carried to the operating room and the solution prepared. I wish to emphasize the fact that the hands of the physician who mixes the solution should be surgically clean and the preparation of the solution done under the strictest aseptic precaution.

Place three physiological salt tablets in the graduate (one tablet to four ounces of water makes normal salt solution). Pour in 12 ounces sterile distilled water. The tablets quickly dissolve. Pour out of the

graduate sufficient of the salt solution to leave 300 cc., the quantity to be used. Next take the ampoule containing the Salvarsan, that has previous been sterilized along with the file, in alcohol, break the end off and empty the contents into the flask. Take care to file completely around the tube, and make a clean break. Pour 30 to 40 cc. of the saline solution on the Salvarsan in the flask, shake well, and you will produce a clear solution in from one to two minutes. Add drop by drop 15 per cent sodium hydroxide solution to the above solution until the precipitate first produced is reprecipitated. The quantity of sodium hydroxide solution necessary varies from 25 to 30 drops, depending upon the size of the drops and the temperature of the solution. To the above solution add the balance of the original 300 cc. salt solution in your graduate. The solution complete, pour it into your graduated bottle with the tubing attached. This bottle is graduated in 50 cc. graduations, each graduation representing one-tenth of a gram of Salvarsan. The temperature is now taken, which should be from 105 to 110 degrees in the receptacle. By the time it reaches the vein it will be the proper temperature.

Before introducing the solution, I want to say a word about the preparation of the patient. He should eat nothing for twelve hours before the administration. Preferably he should have a saline the night before. One hour before the solution is given he should have a hypodermic of one-fourth of morphine and one one hundred and fiftieth of atropine. The site to be used for the injection should be clean, and aseptically as for any abdominal operation. The arm is aseptically bandaged and the patient kept in bed for at least one hour before the infusion.

The solution ready, the skin over the selected vein is cocanized with one-fifth of one per cent Schleich's solution, and opened down to the vein, which is well exposed. A straight needle or one curved of the Hiedingsfeld type, is introduced, and as the blood flows out, the connection to the tub-

ing containing the Salvarsan is made. Allow the Salvarsan solution to flow until it comes warm, then couple up. Depending upon the quantity to be used, I usually consume from six to ten minutes in its introduction. While the solution runs in, the patient can drink water, have a toddy, smoke or read, and their attention is diverted as much as possible. The wound in the arm is closed with a suture or a strip of adhesive plaster, the arm bandaged and the patient allowed to walk to his bed. Here

they are kept absolutely quiet from four to six hours; nothing is given them to eat for twelve hours. They are given water freely and can smoke if accustomed to doing so. They may go home in twenty-four hours, but I prefer that they stay in bed until the second day.

The following report of cases will give you some idea of how well this technic has done in my hands. The histories are taken from the nurses' chart at our private sanitarium where the cases were treated:

NAME	RACE	AGE	INFECTION AND LESIONS.	TREATMENT.	DATE OF INJECTION.	RESULTS.	
						At 2:30 p.m.	chill, nausea, griping in bowels, bowels running off. 3 p.m. T., 99 4-5; P., 90. Threw up breakfast, and some apples eaten night before. Temp. went off during night. He went home next day. Gumma gone in 5 days. Skin clearing. 10 days after gaining weight rapidly; feeling fine.
1. Dr. D.	W. A.	42	Became infected making digital ex. preg. syphilitic, 18 months ago. Had gummata on right buttock.	First 6 months yielded to injections and dry hot air baths. Next 6 months was latent, during which time he took Chichester pills. Last 6 months he became pigmented and had 3 gumma on buttocks that resisted treatment.	On 2-25-11 was given 5-10 gm. 606 at 12:45 a.m., time 12 minutes. Pulse, 80. Intravenous method.		
2. A. W.	W. A.	34	Chancre on penis 8 years ago. Now has scaly syphilides hands and feet.	Had taken all forms, but was scarcely a time that he did not have a lesion.	2-27-11 intravenously 5-10 gm. 606, time 10 minutes. Patient calm, smoking cigarette.	Slight chill. T., 99. No nausea, no diarrhoea or dysuria. Home next day. Lesions healed in 10 days. 30 days after skin clear, feeling fine, taking on weight.	
3. M. P.	W. A.	35	Chancre on penis 5 years ago. Brought in by doctor who treated him. Had post-urethritis.	Mixed, taken internally.	3-1-11 intravenously 5-10 gm. 606. Time, 10 minutes. Patient normal throughout.	Week later looking fine, and said had cured him of gleet that he had at the time of taking 606.	
4. C. A. P.	W. A.	38	Abdominal chancre 1 year ago. Had secondaries and violent mucus membrane lesions.	Took proto-iodide Turkish baths. Hg. and Lanolin, Solumin and the best of care of himself. Only held the disease in check.	3-3-11 intravenously 4-10 gm. 606. Veins so small had to make 4 trials before I large as 20 g. needle.	No nausea, chill, or temp. Went to work 48 hours. 5 weeks later looking fine; no trouble, gaining flesh.	
5. B. R.	W. A.	40	Developed chancre lower lip. 7-4-09 followed by secondaries. Has palmer syphilide.	Injections, mixed treatment, hot dry air baths. Resisted all of them.	3-6-11 intravenous 10 gm. 606. Time, 8 minutes.	No chill, nausea, headache or temperature. Felt nervous 2 hours after. Went to work next day. 3 days afterward herpes of lips developed. Week later palms healed.	
6. J. C.	W. A.	32	Chancre on penis 8 years ago. Now has ulcers mouth and throat. Fissure root of tongue. Adenitis throat and neck. Can't sleep mouth closed. Ulcers over both elbows. Pityful. Takes 12 gr. morph. hypo. daily. Albumenuria.	All forms, which he resisted.	3-19-11 intravenous 6-10 gm. 606. Time, 8 minutes. Normal.	No chill, nausea, headache or temp. Sleeps all the time. Out in 42 hours. To work 3d day. Sleeps with mouth closed. 1st time in a year. Adenitis gone in a week. Lesions well on arms end of 2d week. Albumenuria disappeared 48 hours.	

NAME	RACE	AGE	CHANCE OF VULVA FROM HUSBAND 1 year ago. Had secondaries. Now ankylosed joints, anemic, no visible lesions.	TREATMENT.	DATE OF INJECTION.	RESULTS.
7. Mrs. W. A.	W. A.	17		Mixed and continuous.	3-10-11 intravenous 606. Time, 8 min. Normal.	No chill, headache or elevation of temp. Vomited once. Went home next day. Said to be doing well.
8. A. E. C.	W. A.	27	Chancre penis, 1908. Secondaries healed 5 months under hypo. Hg. bichloride. 5 months later had ulcers inside both legs. Inunctions for 3 months and KI internally. Next 6 months took all forms treatment. Lesions left to return. Has 5 ulcers on penis and scrotum and leg ulcers now.	All forms, including Hg and Lanolin injection.	3-25-11 intravenously 6-10 gm. 606. Time, 8 minutes.	No chill, nausea, temp. or headache. 48 hours lesions on genitals healing. 6 days after all healed. Went to work 48 hours later. Weight 123 lbs. day took treatment. 6 days later weight 129 lbs.
9. G. M.	W. A.	21	Chancre penis 4 years ago. No lesions now. Refused Wassermann.	Inunctions mixed treatment, hot air baths. Intermittent treatment.	4-2-11 intravenous 5-10 gm 606. Time, 6½ minutes. Normal.	No chill, nausea or elevation of temperature. Returned to Middle Tennessee next day. Rept. says doing O. K.
10. W.	W. A.	45	Chancre penis 4 years ago. Palmer syphilide.	1 year at Hot Springs. Took it all. Resisted it all.	4-3-11 intravenously 5-10 gm. 606. Time, 6 minutes. Normal.	No chill, nausea, headache, or temp. Went home 48 hours. Feels excellent. No report yet.
11. D.	W. A.	21	Chancre penis 2 years ago. Secondaries. Violent mouth and pharynx lesions. Entire soft palate and part of pillars of fauces eaten away. Tongue protruding, and unable to take water for 48 hours.	All forms of no avail save Hg. and Lanolin injection, which saved his life during his worst state. Now has partially lost sensation one side.	4-3-11 intravenous 606 6-10 gm. Time, 6 minutes. Normal.	No chill, fever, nausea or headache. Went out and to work 48 hours. Week later feels better, sensation returned.
12. A. T.	W. A.	30	Chancre on penis 10 years ago. Planter lesions now, slight.	All forms.	4-8-11 intravenous 55-100 gm. 606. Time, 6 minutes. Normal.	Pulse 76 when needle was removed. No nausea, headache or chill. Patient said could not tell had taken anything.

My first twelve cases. Have used it since this was written. Other cases same as first twelve. Nothing of interest.

In reviewing the above cases you note there were no Wassermann reactions made before or since the administration of the Salvarsan. There were none made before as all the patients treated had a positive history, either being seen with the lesions by me or by a reliable physician who brought them in. All had lesions at the time save one. He said he had not taken two years' treatment in all, and, furthermore, did not want a Wassermann made—preferred 606.

The reason none have been made since the administration is because sufficient time has not elapsed since the introduction of the arsenobenzol—not yet two months in any case. Further, this paper only qualifies as to the method of giving Salvarsan and its immediate after effect. In this connection I want to say a word about case one, the only one in the series that had nausea, temperature above $99\frac{1}{2}$, diarrhoea or any dirue-sis. The cause of all the trouble in this case was a full stomach and bowels that had not been flushed out. He had not had the preliminary hypodermic of morphine and atropine. All the remaining cases were prepared as though they were going to take a general anesthetic—bowels opened the night before, no breakfast and the preliminary hypodermic. This is a most important factor, and to my mind is the sole cause of no unpleasant after effects following the intravenous infusion of Salvarsan. From the above reported cases I hope that I have made it plain that a simple and inexpensive outfit is all that is required to give Salvarsan—that the giving of Salvarsan under the strictest aseptic precautions with preliminary preparation is fraught with no immediate unpleasant effect and little or no danger to special organs or life.

Before giving Salvarsan I invariably examine each patient minutely and get a report on his eyes from a competent ophthalmologist. Special attention should be directed to the condition of the heart and ves-

sels and kidneys, as well as the eyes. It is the indiscriminate use of Salvarsan by those who are not aseptic, that may bring it into disfavor. Time only will tell what it will do. When we think of syphilis and its ramifications, which extend to every branch of medicine and effect not only the patient *per se* but his family and state, we can but feel grateful to Dr. Ehrlich for this magical drug. Each one of us should try to simplify and extend its usefulness.

May the sins of the father not extend to the third and fourth generations.

DISCUSSION ON THE PAPERS OF DRS. LIT-TERER, NEWELL, AND GLENN.

Dr. Cooper Holtzclaw, Chattanooga.—I presume there is no doubt in the minds of most of those present as to the value of salvarsan and of these papers. These papers would prove that if we heard nothing more upon this subject. But hold on, wait a minute, let's see. I want to be as progressive and in the front ranks as any doctor in the world. How much is salvarsan *per*? Three dollars and fifty cents. What is it? A little, cheap, inexpensive arsenical preparation. What are the claims of it? More by others than by the discoverer and original investigator, Ehrlich. How was this promulgated? Look up newspaper and 15-cent magazines. If it is a specific as it is claimed, its manufacture should be given to the world, as vaccine virus or quinine, practically free to humanity instead of "three-fifty *per*." Let's go slow and observe, and don't get too excited and enthusiastic because you can get \$25 to \$100 for the administration of the drug. The final test of any curative agent rests with us—with you and me. I will ask those who have administered the drug, in any method, to look back now in an honest, sober, conscientious way, whether his cases of injection by 606 has turned out as claimed or as he expected? Or honestly and truly whether or not he hasn't had to go back to Frank Glenn's old treatment of Hg. and KI, according to the individual case? When I first read literature on the subject my enthusiasm waxed great. I must say, however, that my personal experience and observation in the few cases I have used it (some 10 or 12) have been quite disappointing and unsatisfactory. However, I don't want to be an iconoclast or throw a damper on anything of benefit to humanity or the medical profession. As to the method of administration it seems to be a matter of indifference or individual preference—the difference between "wheedle dum or wheedle de"—*i. e.*, the intra-muscular or intra-venous injection of the aqueous alkaline solution with its complicated apparatus, or the subcutaneous injection of 606, incorporated or dissolved in an innocuous sterilized oil, such as oil of paraffin (liquid alboline) or oil of sesame or any other light oil.

This latter oil injection can be done safely and inexpensively by any doctor with ordinary antiseptic precautions and an ordinary two-ounce syringe—the same simple methods we use now in giving diphtheria anti-toxin serum. I have no criticism to make of the methods suggested by Dr. Litterer and Dr. Newell of the application of 606 to the human system—except that I think it all right in expert hands like them, with their knowledge of chemistry and chemical apparatus and hospital facilities for the injection “*secundem artem*” at three-fifty per. Therefore, then please pardon me if I ask you to continue not only to “watch and pray” but also to “wash and spray.” There is more in this than you first think, and will bear second thought.

Dr. William Krauss, Memphis.—I would like to tell Dr. Holtzclaw that I cut out one of the “pones” he speaks of after the injection of an emulsion of salvarsan. This tissue contained a considerable amount of arsenic, and I think this is one good reason for not wanting to produce any of these “pones.” When we shall have arrived at some degree of sanity with respect to the therapeutics of syphilis, salvarsan will be placed upon its proper level. We will then find that it is a great remedy but not a cure-all. I am not a therapist, and have assisted in the injection of some of these patients entirely as a matter of scientific clinical observation. The treatment of syphilis still belongs to the specialist. We must not lose sight of the fact that the best antidote against syphilis is the patient himself; that our chemical specifics do not act solely and singly upon the infectious agent. I do not agree with Ehrlich that salvarsan is purely parasitotropic; it has an affinity for inflammatory and degenerating tissue, and, whereas such a dose will cure this patient and such a dose will cure another patient, the personal equation is with the patient and his natural powers of resistance and not with the medicine or the man who uses it. It is too early to draw conclusions as to the permanency of the “cure” in these cases. Our series were carefully controlled and well selected, yet one of them, a vigorous young woman, nineteen years of age, had some alarming symptoms with the right auditory nerve which finally cleared up under iodids. These came on six weeks after the injection, and the Wassermann reaction has been and is still negative. More than half of our patients have shown a disappearance of the Wassermann reaction, some have had two and even three injections, proving that the patient is the cure and not the medicine. The solution should be quickly made and injected immediately thereafter, so as to prevent oxidation. It is this oxidation that is responsible for toxic symptoms, and in order to relieve Dr. Holtzclaw or anybody else of this supposed bugbear of making up the solution, I wish to say that anyone can make it in a few minutes without resorting to any expensive graduated ware or flights into the realms of chemistry. All you need is an ordinary large hypodermic needle and a Kelly saline outfit, in lieu of

which one can use an ordinary “Wall” cylindrical percollator of one pint capacity, such as you can get from a wholesale druggist for 50c, with enough rubber tubing to make the connection, interposing a piece of glass tubing about the middle for a window. We put 50 cc of the sterile water into a bottle large enough to hold it, shake the powder in gradually, agitating the mixture after each addition until finally a clear solution results, and you need no mortar, pestle, graduated cylinder or glass beads. When solution is complete, add normal sodium hydroxid solution (39 gram to the liter) drop by drop, shaking after each addition until the precipitate formed is entirely redissolved, and then a few drops extra to hold it all in solution against the chlorids in the blood; this takes about 3 cc of the NaOH. Then pour your solution into the cylinder and add 9-10th per cent salt solution to make up to 300 cc, and you are ready for the intravenous injection. As to the relative merits of intravenous and intramuscular injections, it has been held that we desire slow absorption of the drug. This is not Ehrlich's idea at all. The theory of *sterilisans maxima* requires an overwhelming of the spirochete with one massive flooding of the blood, and this cannot be done with any technique of injection that leaves a “pone” for weeks at the site of injection. The elimination of the arsenic after intravenous injections is quite slow. I have wondered why some one has not proposed to loosen up late and concealed foci by preliminary treatment with iodids, so as to make spirochetes accessible to the salvarsan in such cases.

Dr. William Litterer, Nashville.—With reference to intravenous injection, there is no doubt that it is the very best way of giving salvarsan. It will certainly more rapidly obliterate the Wassermann reaction, and relapses are fewer, but there is an element of danger we cannot get around. This danger is the introduction of emboli into the circulation. It matters not how careful you are, even if you filter it through the ordinary filter paper you can hold the prepared material up to the light and observe particles floating in it. If these particles should by chance get into some of the terminal vessels, serious results may follow. In order to eliminate these foreign particles I am in the habit of employing bacterial filters (Berkefeldt) by which all possible foreign matter can be taken out. Another thing that is very essential in giving the intravenous method and that is some means of filtering or straining the air as it runs in to displace the used up fluid. I have in my hand an instrument which I have devised for the purpose of filtering out all the germs and foreign particles that are found in the air. As you can see, it is made of glass having quite a number of loops. These loops are filled with water which act as filters. Another advantage is that you can ascertain whether or not your fluid is feeding and also the rate of flow. I do not believe the intravenous method, should be used as a routine. I think in certain cases it is imperatively indicated, especially

in malignant type of lues where quick action is desired, also in the primary or chancre stage. The intramuscular alkaline method is the safer method of the two. It is slower in being absorbed and therefore more lasting, especially in its tonic effect. I have been of late using with very satisfactory results the intramuscular oil injection. Using olive oil and lanolin and mixing this with the 0.6 gram of salvarsan. Scarcely any pain is produced, and the absorption is quicker than the subcutaneous oil of sesame method as mentioned by Dr. Holtzclaw. The intravenous method is now getting to be the popular method, but it should be used with care. In primary syphilis an intravenous should be given, and four days later an intramuscular olive oil-lanolin should be injected, followed six weeks later by mercurial treatment lasting three or four months. The Wassermann test will be an index as to whether your patient is cured or not. The reason I advocate mercury in every case is due to the fact that the spirochetæ have receptors for Hg. and As. They can be killed by either drug. The two drugs acting like a double-edged sword which more rapidly kill them than if any one drug were only used.

Dr. W. Frank Glenn, Nashville.—The treatment of syphilis is perhaps the most important subject that has come before the medical profession and the public in thirty years. When I began to make a specialty of genito-urinary diseases it was considered of very little importance by the public, and it was largely relegated by the profession, but not only the profession, but the public have placed genito-urinary diseases side by side with any specialty of today. Syphilis in its various ramifications well nigh affects the entire human family. I tell medical students that when they see any disease, I do not care what it is, that fails to yield to the usual remedies, do not give it up until they have tried mercury and the iodides in large doses, and that in many cases they will perform miraculous cures. In regard to the treatment of syphilis, the patient, in my judgement, should be placed on a course of treatment extending over two or three years. In regard to the papers that have been read, I want to say a word or two with reference to the intravenous injection of salvarsan. When this medicine is put into the blood direct it acts quickly, and it is eliminated quickly, and it frequently gets out of the system before it does the work we want it to do. If we do what Ehrlich hoped it would do, namely, to have one full dose destroy the spirochetæ, it would be all right to put it into the vein, but it does not do this, and as to how long it will prevent the disease from returning we do not know. It is only conjecture. Therefore, it is better, in my opinion, to have this medicine injected intramuscularly, and let it be absorbed more slowly, take more time to work on the germs in the system and be eliminated more slowly. When this article of Ehrlich's first came out last year I read it carefully, studied it, and thought over it, but I doubted and still

doubt the very favorable reports that have been coming to me, and I think in less than two years you will find that salvarsan will share the same fate of a great many other remedies, one of them especially Koch's tuberculin, until it will stand in this light, that it is a remedy of paramount importance when you have alarming and threatening symptoms of syphilis to deal with. It undoubtedly will arrest the symptoms quicker and causes a cessation of the danger more readily than any remedy known, but it has not been proven to be a cure of syphilis, because in every case, with few exceptions, the spirochetæ return in the blood. But it can be continued, and I believe the profession are coming to believe that the final standing of salvarsan will be this, that when you have a dangerous symptom, or when you see a patient early, you give him one dose to check the symptoms and prevent the organs from being affected by sequelæ, and then drop back to the reliable, long-continued use of mercury. In regard to mercury, I want to say this, members of the profession fifty years ago adopted this treatment, believing it a specific, that is, to give a patient an enormous dose of the drug in order to kill the germs at once. Fifty years ago they bled a man first, salivated him, and then they quit him. A few years ago we saw holes through the hard palate of patients affected with syphilis; we saw one side of the nose eaten off, and many other unsightly disfigurements. We do not see these things nowadays in the treatment of syphilis. They attributed the bone pains to the use of mercury. Mercury is a double-edged sword, and each patient has his individual dose. It was proven many years ago by the elder E. L. Keyes that mercury in large doses, approaching salivation, counteracted the symptoms of syphilis, also lessened the hæmoglobin. It was proved that mercury in what was termed tonic doses would hold the syphilitic poison in abeyance, eradicate the symptoms, and at the same time build up and increase the hæmoglobin, and that these were the proper doses to give a syphilitic patient. That applies to our cases of syphilis today. While we can get rid of the poison by giving a patient such large doses of mercury as will correct the clinical symptoms and cause the spirochetæ to vanish from the blood we will at the same time deplete the blood. As I said in my paper, in managing a case of syphilis we should keep the patient as near the point of normal as possible, his blood and nervous system to the highest point of vitality, and when such a dose will do that and at the same time counteract the effects of syphilis, and continue that intermittently for a long time, we accomplish the desired result.

Dr. E. T. Newell, Chattanooga.—My paper was simply on the method of giving salvarsan intravenously, and I think it is a safe method. I have had no experience in giving salvarsan hypodermically. I began giving patients with syphilis salvarsan intravenously. I have had no trouble with this method. I do not expect any, and I shall continue to give it in this

way. I have had the opportunity, however, of seeing two patients who received salvarsan through the skin intramuscularly. One suffered eight days with excruciating pain, and the other had an abscess, and in a few days the salvarsan sloughed out. I do not know whether the technic of the practitioner was defective or why it was. As to the giving of salvarsan and the dangers attending its use, I would not advise giving to everyone who had syphilis an intravenous injection of salvarsan. In the first place, you must make a thorough examination. You must select the case for intravenous injection with salvarsan. If the kidneys of the patient are bad, and you do not think it is due to syphilis, let the patient alone. If he has a heart lesion, let him alone. If he has certain lesions of the central nervous system, let him alone. On the other hand, if his organs are healthy, I would not hesitate to give him salvarsan intravenously if he wanted it or needed it. In regard to giving salvarsan, I do not agree with Dr. Litterer that it is so dangerous, provided you have a suitable subject to give it, and if you are aseptic you are not going to do harm. I have seen these little hairs in the solution to which Dr. Litterer referred, that is, if you use cotton or filter paper, but you won't get them if you do not use cotton and filter paper. All you have to do is to put the contents of the ampule into the flask, shake it with distilled water or saline solution. Dr. Krauss said it is not necessary to use saline solution. A great many are using saline solution, while others are using sterile water. Personally, I use saline, and as I have used it considerably and have gotten excellent results with it, I see no reason why I should not continue its use. If you find these hairs they can be removed by filtration, but if you use distilled water, simply adding salvarsan, will not give you anything which you can see. As to giving salvarsan intravenously, I believe any man in a small country town, who has in addition to a waiting room, a fairly well equipped treatment room, can give salvarsan. Of course, he must have the assistance of either a trained nurse or one of his conferees to do so. That is the main point about it. It is very essential that everything be rendered aseptic. If the practitioner does not sterilize his hands or should break his technic, he may kill somebody. But if he uses distilled water and is aseptic in opening the vein, he won't have a bit of trouble. It is quite a simple thing to do.

CHRONIC INFLUENZA.

BY O. N. BRYAN, M.D., NASHVILLE.

Since the pandemic invasion of the country by the influenza bacillus in 1889-1890, as well as previous times, there has been left with us an infection which springs up in endemic and sporadic forms, and one which has possibly caused more complications and affections of the respiratory

organs, as well as the accessory sinuses than any other disease; not only this, but it has rendered diagnosis in this part of the body very difficult. Were the facts known, I think many a death that has been attributed to some other trouble, it would be shown that the primary offending micro-organism was the bacillus of Pfeiffer, which has been and is still present, to prepare a fertile soil for the terminal infection.

Since the discovery of the specific cause of influenza by Pfeiffer in 1892, many questions have had to be answered regarding the infection, one of which is, "Does the disease actually exist in all cases in which the bacilli can be demonstrated?" The answer to this is clearly given by Wasserman as follows: "Where influenza bacilli are found, influenza is present. He amends this statement later by giving cases of pneumonia, with residues that persist, and cases of purulent otitis media in which the bacilli were found. This explains why it is that without there being an epidemic, cases will spring up; just as in typhoid we have carriers, so in this trouble we may have patients that have had grippe and have been left with a chronic bronchial infection or a purulent discharge from the ears only to act as a source of infection to others, hence they may be termed as influenza carriers. And I might at this point speak of the long standing infections that follow, once having this trouble, unlike many other troubles it has no immunity period, or if it has, it is very short, which has been clearly demonstrated to us all in cases in which we have diagnosed as grippe and are about to congratulate ourselves on the success of the treatment instituted when we are confronted with a relapse, or, as in some cases I have seen, they may run for a few weeks practically clear of fever and other symptoms, except for the weakness on exertion, when some slight exposure will precipitate a renewal of the infection or a reinfection.

Cases are reported in which suspicion of chronic influenzal infection could not be demonstrated during life from the pus, either by culture or staining, but could be

*Read before Nashville Academy of Medicine.

demonstrated at autopsy from the pus cavity in the lungs, and this especially, in cases of pulmonary tuberculosis.

Krentz gives an important case of influenzal infection as follows: "This man who suffered from hypertrophy of the heart with enlargement, owing to chronic Bright's disease, in June showed isolated influenza bacilli in the sputum without an acute affection having preceded or without symptoms of an intense bronchitis having existed. The patient succumbed after five weeks without occurrence of influenza symptoms; at the autopsy, besides the fatal renal affection, large quantities of influenza bacilli could be cultivated from the bronchial mucus, and the mucous membrane at the same time was thin and pale; a classical example of the possibility of a finding of influenza bacilli without an affection of influenza of the host." But Ortner takes the broad view of this subject and states that not all cases in which the bacilli can be demonstrated is the affection present, but it is necessary to have a clinical disease as well as a bacteriological.

If we would but for a minute stop and think of the number of patients that come in dating their present illness back to an attack of grippe, then we must attach some importance to this because it is where they first noticed the decline, not only will they date pathological conditions of the respiratory tract (which are the most common) back to this time, but others of the circulatory system as well as gastro-intestinal troubles. Even chronic inflammatory conditions of the kidneys may have their first disturbance dated back to an attack of acute influenza.

Unlike lobar pneumonia, these influenzal affections of the lung are of different varieties as well as locations. In one case it may only manifest itself as a dry catarrh, while in another we will find moist rales in one or more parts of the lungs or diffuse in character, and still in others there may be solidification (or, as some speak of it, an induration) in one part of the lung sufficient to be well demonstrated by physical signs such as marked increase in vocal and tactile

fremitus as well as dullness by percussion; while the rest of the lung may remain clear or have numerous moist rales. It is unlike croupous pneumonia further that it is as likely to occur in the upper lobes as lower, and may not involve an entire lobe. These facts should receive notice because when there is demonstrable rales in the lungs or a dull area that can be outlined that persist for any length of time, together with loss in weight, weakness, slight evening rise in temperature and cough, then we become anxious to find out if this is not a case of tubercular infection. A case I remember seeing this winter well illustrates some of these points as follows:

A boy twelve years old was taken with respiratory type of grippe which lasted a few days, and was followed by a cough that persisted (raising large quantities of mucopurulent sputum in lumps) together with marked weakness, loss of weight, an evening rise of temperature from 99 F. to 100 F. loss of appetite, and on physical examination a dull area was found in the right infra-scapular region about three inches by four inches, together with moist rales over the upper part of the right lung. On examination of sputa several times no tubercle bacilli were found, but numerous other microorganisms were found. Then the von Pirquet reaction was applied which was negative. Hence this might be called a delayed resolution of an influenzal pneumonia. When last seen by me the temperature had been running 99 degrees F. in afternoon for about ten days, he had gained much in strength and weight and appetite was excellent, but the dull spot could still be found, but it had diminished in size.

Ortner says clinically a chronic influenzal bronchitis may almost completely resemble chronic asthmatic bronchitis, but an aid in favor of the latter is the painful condition of the accessory cavities of the nose and pharynx; also lays much stress on the painful points of exit of the branches of the fifth cranial nerve. The sputum is also different; in that of asthma can be demonstrated Charcot's crystals, Curshman's spirals and many eosinophile cells with few

bacteria, while in influenza the sputum is in lumps and composed of mucus, epithelium, polymorphonuclear cells, Pfeiffer bacilli together with other micro-organisms, especially staphylococci and streptococci.

Emphysema is another condition that we find mentioned as a frequent condition associated with chronic influenza. This can be explained on the ground that we have a chronic infection of the bronchial tubes causing forcible expiratory efforts, in the form of constant hard coughing, hence the development of dilated air vesicles. On physical examination of these cases we are likely to find only a dry bronchitis with possibly some rales at the bases and not give them the treatment they should have.

That we may have this infection engrafted on another is well brought out by Finkler as follows: "Influenza occurs frequently with chronic bronchitis of a different etiology. We very frequently observe patients who have coughed for a long period of time, in whom an old catarrh was present, with apparently passive bacteria, in whom the influenza affection is added. This is usually considered to be an aggravation of the prevailing bronchitic condition." The heart also frequently suffers as a result of this infection in the form of a myocarditis or endocarditis, and if these conditions exist previous to the infection then the prognosis should be given with much caution.

I hardly think there is any doubt as to the part this micro-organism plays in furnishing a fertile soil for the reception and growth of tubercle bacilli, while, on the other hand, little is said of the danger of influenzal infection during a primary case of pulmonary tuberculosis, and Ortnier states that "when it becomes established in tuberculous patients it represents an extremely dangerous lethal combination." Therefore, in cases of pulmonary tuberculosis we should exercise every precaution to keep these patients isolated from cases of even mild influenzal infection.

Doubtless many cases of tuberculosis that are rapid in invading both lungs regardless of the most vigorous treatment in the way

of diet, hygiene and medication, are cases in which we have not only the mixed infection of staphylococci and streptococci, but also of influenzal infection. This influenzal infection may have been present before the tubercular infection and caused little damage except that it has prepared the soil. On the other hand, the tubercular process may be in a latent state when by the combination there is soon an acute exacerbation of the trouble that was at first tubercular, but may now be spoken of as a mixed condition or pulmonary tuberculosis complicated by influenza.

Ortnier speaks of an intermittent form of influenza which is characterized by a distinct attack that lasts for a few days with the usual symptoms and signs; then there is a period of several days or weeks in which the patient is free of any signs except possibly the weakness and slight evening rise of temperature, to be followed by another distinct attack, and so on all through the winter months, which shows how hard it is to get rid of this infection.

I remember seeing a medical student that has had three distinct attacks of the respiratory type this spring. And on examination I found he had all the constitutional signs, together with moist rales scattered over both lungs and expectoration of large quantities of muco-purulent material that was negative for tubercle bacilli. He also gave a negative tuberculin reaction.

The only way this intermittent form is explained is that after the infection has once taken place there is soon an immunity established which in some cases lasts only for a very short time, and as the infection may be present in the tissues (very few or none being found in the sputum during the afebrile period or period of supposed immunity) only to be rekindled as soon as the immunity is over. This trouble may not come in the same spot of the lung, but there is a tendency to appear in different spots of lung tissue with a generalized catarrhal condition with moist rales or, on the other hand, the induration may be so great as to be accompanied by tubular breathing, and

instead of a moist condition, it may be only a dry catarrh.

No doubt many of the cases of chronic bronchitis that develop, especially during the winter months, are due to an influenzal infection that is lurking in the respiratory organs awaiting some indiscretion or exposure to rekindle the former trouble. Some men think that influenza bacillus plays an important part as to the severity and complications of the acute exanthemata, and especially do they make this applicable to measles and scarlet fever. This may explain why it is some of these cases seem to recover without any severe trouble in the respiratory tract, while other cases of measles or scarlet fever, without any apparent reason, will develop respiratory symptoms in the form of broncho-pneumonia or a severe bronchitis that will last for several weeks, we can all remember cases of pulmonary tuberculosis in which the people will say "the lungs have been weak ever since the child had measles," while the measles gets the credit the offending micro-organism that has in all probability caused the trouble is the bacillus of Pfeiffer. This may also be the case in tonsilitis and diphtheria in which we have an endo-carditis as a result of the toxins of the primary cause on the endocardium together with an influenzal bacteraemia.

Another condition that this infection may play a part in is typhoid fever, in which the respiratory catarrh is exaggerated and does not subside as readily as it does in typhoid alone, and in these cases Jehle, who has done quite a lot of bacteriological work along this line, says: "Typhoid bacilli may occur in pure culture as well as in association with other micro-organisms, especially with the bacillus of influenza." Therefore, in cases of typhoid fever that have run their course, it is well in case of relapse to consider together with bone lesions, cholecystitis, etc., the possibility of the patient having a grippal infection that has recently taken place or from a lowered condition of the patient's resistance, giving it an opportunity to manifest itself.

In conclusion, I would like to say that in taking the history of any case we should always inquire if the patient has had grippe, just as we do of typhoid; and we should not forget that once having influenza means the infection is in the tissues and we are unable to say when they are rid of the same. Especially should we inquire more thoroughly in all obscure pulmonary cases of the possibility of it being influenzal infection, and I think if we would do so it would render us valuable aid in diagnosing these obscure conditions.

The Tuberculosis Hospital of Davidson County and the city of Nashville is in operation, ten tents being occupied by patients, and a large waiting list being full. The improvement that has been brought about in the condition of the patients now on hand is remarkable. The permanent hospital is being built. Too much cannot be said in commendation of Drs. Hibbett and Tucker for their great work in the establishment of this institution and for their intelligent management of the cases that have entered and are now being cared for. The time is coming, and that soon, when every progressive county will make provision for their tuberculous like that made by Davidson County and the city of Nashville.

"I WONDER IF YOU MISS ME."

(Lovingly dedicated to my appendix.)

'Twas just a year ago today we parted,

You left me, dear, perhaps 'twas for the best,

You were so restless, dis-con-tent-ed,

I miss you, though I've had a lovely rest.

My purse it seems can never be the same, dear,

But the dear old doctor said that you must go,

'Twas a matter of health, and he took you by stealth,

Though I told him I'd miss you so.

Refrain.

I wonder if you miss me just as much as I miss you,
I wonder if you're at leisure now, or if you've work
to do,

I wonder if you'd know me if perchance my face
you'd see,

Yet I know that I must miss you more than you
miss me.

Anonymous.

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EDITORIALS**THE SPIROCHAETA PALLIDA.**

Noguchi has at last been able to fulfill the requirements of Koch's law relative to the spirochæta pallida, which up to this time, while generally accepted as the cause of syphilis, awaited full proof. By means of stab-cultures in serum water medium containing a piece of rabbit tissue and grown under strict anærobic conditions, Noguchi was able, by repeated transfers, to grow the spirochæta in pure culture. When injected into rabbits, this reproduced the disease from which the spirochæta could again be grown. The postulates of Koch's law are now fulfilled, and scientists can no longer doubt that the spirochæta pallida is the cause of syphilis.

THE PREVENTION OF TYPHOID FEVER.

In our State where typhoid fever exists almost, if not throughout the entire year, it behooves us to be awake and take full advantage of any advance in science which tends towards its prevention or control.

We would emphasize the importance of considering every suspicious case as a menace to public health, and would urge the local Health Boards to give the general practitioner the advantage of blood cultures in this disease as they do in diphtheria. Unfortunately, until the disease is well advanced into its second week, we have no positive method of diagnosis. With the two exceptions of blood cultures and the demonstration of the typhoid bacillus in the feces, both of which methods are only practical in well equipped laboratories, we are compelled to depend upon the Widal test, and the limitations of its usefulness are manifold. We would respectfully call the

attention of the various Health Boards to these important means of early recognition, and would urge the practitioner to give especial care to the excreta in suspicious as well as in well marked cases, and to guard carefully those who are associated from direct contagion, not only by proper disinfection of the excreta, but by proper and safe screening from flies, etc. We would not dare go so far as to say that the presence of typhoid is a slur on medical ability, but there can be no denial to the fact that we are often negligent in the application of common knowledge in its prevention.

On October 9, over the rails of the Southern Railway, there will start at Bristol the great Agriculture-Health-Education Special, which will make a tour of the State as complete as the railroad facilities and the generosity of the great systems which traverse the State will allow. To Capt. T. F. Peck, Commissioner of Agriculture, is due the credit for this movement. The train was originally planned for as an Agricultural Educator, but Commissioner Peck, fully alive to the value of Public Health work and to the necessity of the conservation of the health of the people if real progress is to be made by Tennessee, invited the Health Department to put an exhibit on the train and send speakers to preach preventive medicine to the great crowds of people that will be reached. Dr. Albright and his assistants in the office of the State Board of Health are very busily engaged in preparing to make a good showing on the special.

The dispensary plan for treating hookworm disease is meeting with wonderful success in North Carolina, Mississippi and Alabama. Thousands of cases have been treated in the free dispensaries established jointly by the state and counties in which they are operated. The expense incurred by the counties is ridiculously small when measured by the good that is accomplished. One of the results of the dispensaries in North Carolina is that one or two counties

have determined to employ "all time" health officers who are to be paid salaries that will justify them in devoting their energies to public health work. The Infection Survey in several counties in Tennessee show from 40 per cent to 61 per cent of children between the ages of 6 and 18 infected. This, it would seem, certainly justifies the trial of the dispensary plan in Tennessee.

The Health Department of the city of Nashville, under the wise guidance of Dr. W. E. Hibbett, has made progress that is most commendable. Dr. Hibbett has shown peculiar fitness for the position he occupies, and has quietly instituted new measures that add very largely to the efficiency of his department. One of the greatest things that Hibbett has done was the securing of an official nurse for his department. Visiting in homes, this nurse can give much needed instruction to mothers concerning the feeding of infants, and her work has already resulted in the greatest good. The value of this movement has already become so apparent that a member of the City Council has introduced a bill providing for the appointment of additional nurses by the Board of Health.

Hamilton County is to have medical inspection in her schools this year. A movement has been started to secure medical inspection in the Shelby County schools, and the service is to be extended in the Nashville public schools. The American League for Medical Freedom "helped some." If they will come back with their hirelings and jugglers a time or two more we will have medical inspection all over the State.

The demands that have been made upon the State Board of Health for information concerning pellagra have resulted in the placing in the field of three men who will use their best effort to be of material assistance to the physicians of the State in the diagnosis of cases and in any other way possible to them. Dr. Wm. Krauss, of Memphis, has been assigned to West Tennessee;

Dr. B. S. Rhea to Middle Tennessee, and Dr. J. C. Brooks to East Tennessee. These gentlemen need no introduction to the profession in the State, and their ability and sincere interest in the cause of medicine insure that something worth while in the way of instructive data about pellagra in Tennessee will be forthcoming.

NEWS NOTES AND COMMENT

The doctors of Chattanooga have recently been subjected to a flimflam scheme worked by a pseudo student or doctor giving his name variously as Dr. J. D. Cooper, Dr. T. H. Cook and Dr. Harris, and as practicing at either Sheffield, Jasper or Huntsville, or other Alabama towns. He secured \$60.00 from Dr. H. L. Fancher and \$10.00 from Dr. Geo. R. West, both on worthless checks. Last April he defrauded Dr. C. Holtzclaw out of \$300.00. When arrested he was positively identified by the various doctors he had interviewed and was bound over to the Criminal Court under bond of \$3,000.

About 600 cases of pellagra have already been reported to the State Board of Health and Drs. Krauss, Rhea and Brooks have many engagements booked to investigate other cases.

It is reported that Dr. L. B. Graddy, of Nashville, who has been one of Nashville's leading specialists, has permanently removed to Texas, where he has large interests.

Dr. A. E. Dawson, of Chattanooga, who has been in poor health for many months, was on August 14 adjudged insane and committed to an asylum.

Drs. E. T. Newell and J. S. B. Woolford, of Chattanooga, have just returned from a sojourn at the Mayo Clinic, at Rochester.

Dr. C. B. Wylie, of Chattanooga, will leave September 1 for three months' spe-

cial work in the eye, ear, nose and throat clinics of Chicago and New York.

Dr. Stanton H. Barrett was appointed August 14 as city bacteriologist to the Chattanooga Board of Health.

The father of Dr. B. A. Deakins, of East Chattanooga, Tenn., died at Whitwell, Tenn., on August 8, age 68.

Dr. A. S. Brown, of Abilene, Tex., a recent graduate of the University of Tennessee, has located in Nashville.

Dr. Murray Tate, of the Woman's Hospital of New York, has recently located at 151 Eighth avenue, North, Nashville.

The Dental Department of the University of Tennessee, formerly located in Nashville, has been moved to Memphis.

We regret to report the death of the infant daughter of Dr. G. Victor Williams, of Chattanooga, who died August 25.

Dr. Harry O. Null, of Ridgedale (Chattanooga), is receiving congratulations upon the advent of a son, born August 20.

Dr. K. P. Elam, formerly of Idol, has removed to Tate Springs.

Don't forget to report to your health officer.

SOCIETY PROCEEDINGS

HAMILTON COUNTY.

Weekly meetings of the Chattanooga Academy of Medicine and Hamilton County Medical Society held August 11, 1911, at 8 p. m.

President James H. Atlee presided. Roll of members called, thirty-nine being present. Thirteen visiting physicians were present. Minutes of the last regular meeting were read and approved. A letter was read from Commissioner of Health H. Clay

Evans advising that beginning August 16 attending physicians must make and furnish the City Board of Health a death certificate signed by the physician in person that a proper burial permit may be issued. The extended discussion of pellagra was continued from the last two meetings. Cases of this disease were reported and discussed by Drs. L. B. McWhorter, J. C. Brooks, H. Berlin, P. J. A. Cleary, Y. L. Abernathy, E. B. Anderson, W. H. Cheney, C. A. Cobleigh, L. T. Stem and Joseph, of Louisiana. Two interesting essays were read. First, Dr. R. M. Colmore, on "Gonorrheal Infection of the Seminal Vesicles"; second, Dr. H. L. Fancher on "Symptomless Gonorrhea in the Female." Discussion by Drs. J. L. Shirley, of Whitwell; H. Berlin, J. W. Macquillan and P. J. A. Cleary.

The Society adjourned.

The weekly meeting of the Chattanooga Academy of Medicine and Hamilton County Medical Society was held August 18, 1911.

President James H. Atlee presided. The following members were present: Drs. W. G. Bogart, J. J. Gee, S. I. Yarnell, J. M. Broyles, J. Lee Goodwin, N. J. Minter, Y. L. Abernathy, E. B. Anderson, T. J. Zeigler, Vaulx Gibbs, Geo. R. West, C. A. Cobleigh, B. G. Allen, George F. Ryan, B. Sullivan, W. H. Cheney, J. C. Cunningham, E. E. Reisman, John B. Steele, J. W. Macquillan, L. C. Williamson, F. T. Smith, E. B. Wise, H. L. Fancher, J. B. Haskins, T. E. Abernathy, H. M. Barker, Raymond Wallace, C. B. Wylie, C. H. Gurney, B. F. Travis, E. D. Newell, H. B. Wilson, J. H. Taylor, M. M. Wagner, S. A. Fowler, R. H. Tatum, H. Berlin, D. C. Morris, M. A. Meacham, Fred B. Stapp, C. Holtzclaw, G. Victor Williams, Jas. H. Atlee and H. P. Larimore. There were fifty-seven visitors present, including the following: Dr. and Mrs. Marshall, Mrs. Dr. John B. Steele, Capt. and Mrs. A. J. Gahagan, Mrs. Atlee, Dr. James Cravens, of Gainesville, Texas; Dr. Gus Shipley, of Athens, Tenn.; Dr. Hill, of Mt. Junction; Dr. C. G. Gates, of St. Elmo; Drs. Slayden, Burnes, Hill, Albert, Broyles, Culpepper and Hysinger, city; some students of medicine,

some laymen, a large number of nurses, including delegations from Erlanger Hospital, West-Ellis Hospital, the Highlands Sanitarium, and Newell's Infirmary, also many visiting ladies.

Cases of pellagra were exhibited and discussed by Drs. N. J. Minter, C. H. Gurney, Raymond Wallace and others. Miss Mattie E. Plewess, head nurse at Erlanger Hospital, read a most interesting essay entitled "The Doctor and the Nurse, from the Nurse's Standpoint." Dr. George R. West delivered a splendid address on "The Doctor and the Nurse, from the Doctor's Standpoint." Discussion by Drs. C. Holtzelaw, H. Berlin, J. W. Macquillan and W. G. Bogart, and Capt. Gahagan and Mrs. Gahagan. The Society then adjourned to the residence of Dr. James H. Atlee, where a reception was tendered the nurses. Refreshments were served and a most pleasant evening spent. The Society adjourned.

The weekly meeting of the Chattanooga Academy of Medicine and Hamilton County Medical Society was held September 1, 1911, at 8 p. m.

President James H. Atlee presided. Roll of members called, fifty being present. Six visiting physicians were present. Minutes of the last regular meeting were read and approved. Interesting cases were reported and discussed by Drs. Raymond Wallace, J. S. B. Woolford, George R. West, B. S. Wert, Perry Bromberg, John B. Steele and E. B. Anderson. Dr. Perry Bromberg, of Nashville, read an original and most interesting and instructive essay entitled "A Further Contribution to the Surgical Treatment of Acute Epididymitis." Discussion opened by Dr. E. E. Reisman. Discussion continued by Drs. J. P. Haskins, C. Holtzelaw, J. W. Macquillan, E. B. Anderson, T. E. Abernathy, W. F. McManus, J. C. Cunningham, Raymond Wallace, H. L. Fancher, G. Victor Williams, J. J. Gee and E. T. Newell. Discussion closed by Dr. Bromberg. The Society adjourned.

H. P. LARIMORE, *Secretary*.

WASHINGTON COUNTY.

Following is the program of the Johnson City and Washington County Medical Society, September 7, 1911, at Johnson City, Tenn., at the Commercial Club rooms: Reading of the minutes of the previous session; address of welcome, J. P. Randall, M.D., of Johnson City; "Country Surgery: its Difficulties," with illustrated cases, C. P. Fox, M.D., Greeneville; to open discussion, W. J. Mathews, M.D., Johnson City; "General Principles of Operative Surgery," C. W. Brabson, M.D., Limestone; open discussion, W. T. Kennedy, M.D., Johnson City; "Pellagra," J. C. Brooks, M.D. (State Medical Officer, of Chattanooga, will give a talk on this disease, and in connection will be presented clinical cases); "Embolism of the Right Popliteal Artery Resulting in Dry Gangrene," E. T. West, M.D., Johnson City; to open discussion, H. D. Miller, M.D., Johnson City; "Fever," R. W. Dulaney, M.D., Jonesboro; to open discussion, R. L. Patton, M.D., Telford.

J. W. Cox, *Secretary*.

The Johnson City and Washington County Medical Society met in its quarterly session today. It was found that it is the wise thing to do to have one-day sessions every three months for the benefit of the rural or out-of-town physicians, who are unable without great inconvenience to be present every week or month at night in the city, the attendance today being the second quarterly day session, was much better attended, and we had quite a number of physicians from other counties some of whom read papers; also some from Virginia and North Carolina.

The Society met at the Commercial Club rooms of this city, Dr. G. J. Sells, President, presiding. The address of welcome by Dr. J. P. Randall, of this city, was presented in a very appropriate and elegant manner.

Dr. C. P. Fox, of Greeneville, Tenn., read a well prepared and very practical paper on "Country Surgery," which was extensively discussed and highly appreciated by the local and visiting physicians.

Dr. C. W. Brabson, of Limestone, Tenn.,

read a good paper on "The Principles of Operative Surgery as Applied to the Country Physician." Both of these papers were especially instructive to the country physician, and showed that brilliant results were often obtained. Special stress was well laid on asepsis and sanitary surroundings, and how easy it was to be clean where you have water, heat and mosquito netting, to prepare the field of operation, surroundings of the patient and instruments and dressings from contamination.

Dr. Brooks, of Chattanooga, failed to be present. He was expected to give a talk upon pellagra. However, the subject did not go by without an extensive discussion, which was opened by the County Health Officer, Dr. J. F. Arnold, of Limestone, Tenn. The subject was extensively discussed, and cases were reported by several physicians present.

Dr. R. W. Dulaney, of Jonesboro, read a timely and instructive paper on "Fevers," which was well received and extensively discussed from a differential diagnostic standpoint. Following the paper and the discussions of the same, Dr. E. T. West offered a resolution: That the Johnson City and Washington County Medical Society go on record favoring the establishment of a county or state laboratory for research to better equip the physicians in making diagnosis in questionable cases where the public health of the community may be better protected from the invasion of communicable diseases, the public welfare demanding as much. Seconded by Dr. E. A. Long, and adopted by unanimous vote of the membership of the Society and visiting physicians.

The following applications were made for membership: Dr. W. S. Taylor, of Milligan, Carter County; date of graduation, 1896. Vanderbilt.

Dr. J. R. Pierce, Boon's Creek, Washington County; date of graduation, 1909. Lincoln Memorial.

Dr. G. Edward Campbelle, of Elizabethton, Carter County, Tenn., 1908. University of Nashville.

Dr. W. W. Stallard, Dunganon, Va. C. P. & S., Baltimore, Md., 1886.

W. R. Reeves (medical student), Jonesboro, R. F. D.

The local profession and membership dined and smoked the visiting physicians at the Hotel Pardue. The Society meets in its next quarterly session the first Thursday in December. J. W. Cox, *Secretary*.

WILSON COUNTY.

On July 27 the Wilson County Medical Society gave a basket dinner at Hamilton Springs, four and one-half miles west of Lebanon. The day was ideal for "picnicing" and a number of the physicians were present with their families and baskets.

Dull care was left at home and the day was a general round of pleasure. We are pleased with the results of the day and hope for a repetition of many days as pleasant as this was.

J. R. BONE, *Secretary*.

HENDERSON COUNTY.

The Henderson County Medical Society was reorganized June 5, 1911. The following were the officers elected: Drs. W. B. Keeton, Scott's Hill, President; S. T. Parker, Lexington, First Vice-President; E. E. Waller, Juno, Second Vice-President, and W. F. Huntsmann, Lexington, Secretary.

Members of the new organization are as follows: Drs. W. B. Keeton, W. T. Watson, M. P. Boyd, J. T. Keeton, J. W. Hendricks, S. T. Parker, J. C. Stinson, W. F. Huntsmann, C. E. Bolen, R. L. Wylie, G. A. Brandon, C. H. Johnson, E. E. Waller and J. M. Arnold. The Society meets on the second Tuesday in each month. All physicians of the county are urged to become active members.

Respectfully submitted,
W. F. HUNTSMANN, *Secretary*.

SUMNER COUNTY.

The Sumner County Medical Society met at the Court House in Gallatin, September 6, in a regular stated meeting with the largest attendance present in the history of the Medical Society since its reorganization. The principal subject under discussion was

"Pellagra." The Tennessee State Board of Health was kind enough to send Dr. Rhea up to lecture and discuss pellagra for us. Dr. Rhea gave a very able and interesting paper, which was appreciated by all the members of the Society, as well as the non-members present. The following three members were added to our Society at the meeting: Drs. J. H. McNeil, F. E. Hobdy and L. E. Wheat. Fraternalty yours,

WALTER DOTSON, M.D., *Secretary*.

WEAKLEY COUNTY.

The Weakley County Medical Society met on September 4, and reorganized, with the following fifteen members: Drs. V. A. Biggs, J. C. Young, R. M. Little, Secretary; I. J. Tatum, B. S. Mayo, J. B. Finch, J. D. Shannon, G. C. Thomas, L. F. McKay, President; H. V. Hannings, E. J. Shannon, T. E. Sawyers, T. Z. Elinor, B. B. Parrish and D. W. Scates.

The meeting was very enthusiastic, and the work that Dr. Dulaney did was much appreciated by the officers and members. Dr. Krauss, of Memphis, delivered a very interesting paper on "Pellagra," also gave very good advice as to medical organization, etc.

We hope to improve the Society with time. Very truly,

R. M. LITTLE, M.D., *Secretary*.

SMITH COUNTY.

In order to give you some idea of what the Smith County Medical Society is doing, I enclose you the program for the August meeting, which was held the fourth day of the month, as follows:

1. Clinics and clinical reports.
2. A paper, "Anesthesia," by Dr. R. T. Parker. To open discussion, Dr. J. J. Beasley.
3. A paper, "Cholera Infantum," by Dr. C. H. Donoho. To open discussion, Dr. Frank Swope.

This program was carried out, and under Section 1 there were several cases reported as follows:

"Roseola, with a Comatose Condition Complicating," by Dr. J. J. Beasley.

"Eclampsia," by Dr. J. H. Chism.

"Tubercular Peritonitis," by Dr. R. T. Parker. In connection with this case Dr. Chism gave his experience with tuberculin in two cases of incipient tuberculosis, extending over a period of twelve months.

These papers and reported cases were very interesting, and the general discussion that followed brought out quite a number of points of value, and, as a result, all who were present were benefitted.

Our program for the September meeting, which will be the first Friday, is as follows:

1. "Uterine Displacement and its Treatment," by Dr. M. N. Alexander. To open discussion, Dr. Isham Beasley.
2. "Gonorrhea in the Male and its Treatment," by Dr. R. E. Key. To open discussion, Dr. J. H. Chism.
3. Clinics and clinical reports.

B. J. HIGH, *Secretary*.

GRAINGER COUNTY.

The Grainger County Medical Society met in Rutledge on Wednesday, August 2, 1911.

1. House called to order by President, Dr. J. W. Pierce, of Tate Springs.
2. Reading of minutes of previous meeting. Births reported for the month of July were seven. Deaths four.

After the regular order of business had been dispensed with, some very interesting papers and discussions were enjoyed as follows:

- "Typhoid Fever," by Dr. G. D. LeQuire.
 "Pellagra," by Dr. P. H. Acuff.

These papers were freely discussed by all members present. Reports of clinical cases aroused keen interest in the Society. Our interest seems to be growing.

Respectfully submitted,

P. H. ACUFF, M.D., *Secretary*.

THANKS, BROTHER.

To the Editor.

Allow me to congratulate you on the improved appearance of the JOURNAL. I was a member of the committee that recommended the publication of the JOURNAL in lieu

of the bound volumes of transactions. The committee were of the opinion that a monthly journal would work to the best interests of the State Medical Association, and while I have witnessed a fight every year to return to the former plan of publication, I am now more firmly convinced than ever that the House of Delegates did the right thing when they voted to establish the JOURNAL.

The superiority of a journal as a substitute for the traditional bound volume of transactions would seem to need no argument. It comes with freshness every month. It is quite apt to bring to the notice of many a busy man at least one article discussing a condition that is just at that time absorbing his attention and actively present in a case under his care. The bound volume, to be sure, would contain the same article, but it is up on the shelf and the thought of it has passed out of mind long ago. We must look at the conditions as they are. In the experience of the vast majority of doctors the bound volume of transactions, as soon as it comes, is added to the row of previous volumes on the shelf, out of sight and out of mind, like its fellows becomes gradually covered with dust and is rarely taken down except perhaps at annual house cleaning. The JOURNAL comes fresh every month, is removed from its wrapper and at least glanced through, with the news items to attract attention and the probability that at least one article may be apropos of a case in hand and studied carefully; the affairs of the Association and County Societies are there to awaken interest and the various reform movements to enlist his sympathy and cooperation.

To return to the bound volume as a means of publishing our transactions would be taking a step backward, and I hope I shall never see the time when this will be done.

Yours very truly,

S. W. WOODYARD, M.D.

BOOKS RECEIVED.

PROGRESSIVE MEDICINE.

A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College, Philadelphia, assisted by Leighton F. Appleman, M.D., Instructor in Therapeutics, Jefferson Medical College, Philadelphia. Volume III. September, 1911. Published by Lea & Febiger, Philadelphia.

THE PRACTICAL MEDICINE SERIES.

Vol. V. Obstetrics. Edited by Joseph B. De Lee, A.M., M.D., and Herbert M. Stone, M.D. Series 1911. Published by The Year Book Publishers, Chicago. Price, single volume, \$1.25. Price of the series of ten volumes, \$10.00.

MANUAL OF THE DISEASES OF THE EYE.

For Students and General Practitioners. Edited by Charles H. May, M.D., Chief of Clinic and Instructor in Ophthalmology, College of Physicians and Surgeons, Medical Department, Columbia University, New York, 1890-1903; Attending Ophthalmic Surgeon to the Mt. Sinai Hospital, New York; Consulting Ophthalmologist to Bellevue Hospital, to the French Hospital, to the Red Cross Hospital, and to the Italian Hospital, New York. Seventh Edition, Revised, with 362 original illustrations, including 22 plates, with 62 colored figures. Published by William Wood and Company, New York. Price, \$2.00 net.

THE SEXUAL LIFE OF WOMAN.

In its Physiological, Pathological, and Hygienic Aspects. Edited by E. Heinrich Kisch, M.D., Professor of the German Medical Faculty of the University of Prague; Physician to the Hospital and Spa of Marienbad; Member of the Board of Health, etc., etc. 97 illustrations. Price, \$5.00. Published by Reblman Co., New York.

HIERONYMUS FRACASTOR'S SYPHILIS, FROM THE ORIGINAL LATIN.

A translation in prose of Fracastor's immortal poem. Printed on hand-made imported paper; library binding. Crown Octavo. The Philmar Company, St. Louis, Mo. Price, \$2.00.

A MANUAL OF PRACTICAL HYGIENE.

For Students, Physicians and Health Officers, by Charles Harrington, M.D., late Professor of Hygiene in the Medical School of Harvard University. Fourth edition, revised and enlarged by Mark W. Richardson, M.D., Secretary to State Board of Health of Massachusetts. Octavo, 850 pages, with 124 engravings and 12 full-page plates, in colors and monochrome. Cloth, \$4.50 net. Lea & Febiger, Philadelphia and New York, 1911.

A MANUAL OF CLINICAL DIAGNOSIS BY MEANS OF LABORATORY METHODS.

For Students, Hospital Physicians and Practitioners. By Charles E. Simon, M.D., Professor of Clinical Pathology and Experimental Medicine in the

College of Physicians and Surgeons, Baltimore. Seventh edition, enlarged and thoroughly revised. Octavo, 780 pages, with 168 engravings and 25 plates. Cloth, \$5.00 net. Lea & Febiger, Philadelphia and New York, 1911.

BOOKS REVIEWED.

HIERONYMUS FRACASTOR'S SYPHILIS

Is a translation in prose of Fracastor's Latin poem, and is published by the Philmar Company, St. Louis, Mo. The book is an English translation of the celebrated poem of Fracastor, who is presumed by his mythologic references, to have given the name syphilis to this disease. It is well worth reading, for it shows throughout its lines the erudition of its author, his keen appreciation of the importance of the subject, as well as his mastery of the matter in hand.

In his mythological explanation of the discovery and application of Mercury and Guaiac in the treatment of syphilis, his muse did not desert him.

1,000 SURGICAL SUGGESTIONS.

By Walter M. Brickner, B.S., M.D., Adjunct Surgeon Mount Sinai Hospital, Editor in Chief American Journal of Surgery, with the collaboration of James P. Warbasse, M.D., Harold Hays, M.D., Eli Moschcowitz, M.D., and Harold Neuhoof, M.D. 225 pages. Cloth bound semi de luxe, \$1.00. Full de luxe, leather, \$2.25. Surgery Publishing Company, 92 William Street, N. Y., U. S. A.

The collaborators of this little book have collected 1,000 epigrams and suggestions of surgical importance, well and conveniently arranged. There is much valuable information expressed in concise and attractive language. The index is complete and the volume is of neat appearance.

NOTICE

TO THE MEDICAL PROFESSION :

On this page we wish to send a message to the profession of Tennessee. It is the one great desire and object of your journal to render to the profession of the State as much valuable service as it possibly can. The way to accomplish this is through original articles, reports of cases, abstracts, etc.

We wish to emphasize the fact with reference to original articles that the Journal will spare no means on its part in order to present in the very best condition to the profession any article it may publish. It will cheerfully prepare plates of illustrations, and really, we urge writers to illustrate their articles by photographs or drawings. We believe that illustration clears up the subject matter and renders it of greater value. We urge our writers to send their work to this journal, and we will see that the printer's part and the distribution are properly done.

Another valuable educational point is the report of the selected cases. Some valuable and useful information may be given to the young and old practitioner by well prepared reports of selected cases

We, therefore, request the profession, especially those interested in improving the practice of medicine, to send the Journal original articles on subjects of their own choice and also reports of cases which contain an element of destruction. A wide support of this kind from the entire profession of the State will insure the continued publication of a journal which will, for that reason, be of the greatest help to every practitioner in this section of the country.

Respectfully,

JOURNAL TENNESSEE STATE MEDICAL ASSOCIATION.

THE JOURNAL

OF THE

TENNESSEE STATE MEDICAL ASSOCIATION

DEVOTED TO THE INTERESTS OF THE MEDICAL PROFESSION OF TENNESSEE

ISSUED MONTHLY under Direction of the Trustees

PERRY BROMBERG, M. D., Editor and Sec'y

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VOLUME IV

NASHVILLE, TENNESSEE, OCTOBER, 1911

NUMBER 6

INJURIES OF THE HEAD.*

BY DUNCAN EVE, JR., M. D., NASHVILLE.

Head injuries form not only the most common, but the most important class of injuries which a surgeon is called upon to treat. I will mention a few simple injuries so as to call attention to one or two points in regard to them.

Contusions. If a contusion involves the forehead it may produce physical signs, both objective and subjective, which might confuse the surgeon in his diagnosis with a fracture of the anterior fossa of the base of the skull. In such an injury as a contusion of the forehead, that is if it is a severe one, we generally have bleeding from the nose, and if present, it is thick, dark blood and does not recur or continue after the first few hours, unless disturbed by dressing that displaces the clots. The swelling occurs right after the injury and discoloration begins superficially and gradually, involving the deep layers of the skin and subcutaneous tissues, and the swelling is not confined especially to the eyelids. Now in a fracture of the base, the hemorrhage from the nose is much more severe and is thin, watery, light colored blood, which trickles out for many hours; the swelling of the eyelids develops slowly and the discoloration begins in the deep tissues and comes gradually to the surface. Therefore, where there is the slightest

doubt of diagnosis, we should keep the patient in bed for a few days.

Laceration of the Scalp. Extensive wounds always bleed profusely, especially if in the neighborhood of the temporal or occipital regions, sometimes we find the hemorrhage is alarming. In the treatment of such wounds, the most important thing is the complete arrest of all hemorrhage, therefore the chief point in these cases of hemorrhage is to remove the clots from under the lacerated edges before bringing the edges together with sutures or compress. Large blood clots are soft and they prevent the flaps from being pressed firmly upon the bone and the hemorrhage can not be controlled. I have had several patients to bleed so much that their condition was alarming, yet the bleeding was controlled promptly by removing the clots and applying a small compress and a firm occipito-frontal bandage.

If the wound is on the top of the head, then it is best after closing the wound to place a small compress of gauze and make pressure with your hand some two or three minutes before applying the recurrent bandage, because with such a bandage it is impossible to get firm pressure.

Depressed Fracture of the Skull; With fracture of the vault of the skull, we have more or less cerebral compression and sometimes the dura is ruptured and the brain lacerated. The symptoms and signs of simple fracture of the vault are not always easy to diagnose at once, because the

* Read before Tennessee State Medical Association April, 1911.

swelling of the soft parts may so mask the damage to the bone that one cannot accurately feel the fracture; the swelling usually feels doughy to the touch. In such cases, we should give a general anesthetic and make an exploratory incision over the area, or the X-ray can decide the question. If we have an extensive fracture with marked depression, of course, it will be very easy to diagnose.

Compound fractures can be made out easily. With such injuries, we frequently see patients able to walk into the hospital and tell us all the details of the accident. I have had several patients in the past four or five years to walk into my office with such an injury.

Report of a case. J. L., employee of the N. & C. R. R. shops, walked into my office a few months ago, giving a history of having been struck accidentally with a hammer. Examination of the wound showed he had a compound fracture over the parietal region. As to his general condition, there was nothing more than would indicate a laceration of the scalp. I gave him immediate attention, shaving the scalp, sterilizing the wound and placing a sterile dressing on same and sent him to the hospital. Under general anesthesia, I made a horse-shoe shaped incision around the lacerated parts and lifted the flap, finding a depressed fracture, which upon being removed disclosed a slight lacerated condition of the dura. This dural laceration was sutured with No. 0 plain catgut. I placed a small drain of catgut from the dura through the lacerated wound which was in the middle of the horseshoe flap, this drain was removed on the second day and the patient dismissed on the fourteenth day from the hospital and returned to work on the twenty-first day.

Cerebral Compression from Hemorrhage; Traumatic hemorrhage is nearly always from one of the branches of the middle meningeal artery. It generally occurs in connection with a fracture of the vault or base of the skull; but rupture of the artery may, however, occur without any fracture. As a rule, there is a distinct

period of consciousness between the accident and the lasting coma. There is a tendency of the blood to spread downward towards the base of the skull, and one of the typical signs is dilatation of the pupil on the affected side. The more pronounced the paralysis of the face, the lower the position of the clot; and the more pronounced the paralysis of the legs, the higher the position of the clot. If the hemorrhage follows a fracture, there is usually a history of temporary concussion followed by reaction and a lucid interval, this interval varies from a few minutes to a few hours, and then occurs gradually, drowsiness finally ending in coma. When the compression is complete, the patient is in a comatose condition which is usually characterized by a low and full pulse, stertorous respiration with dilated and sometimes fixed pupils. Paralysis also results which varies, owing to the position of the clot. In some cases, we notice twitching of various muscles, and when this occurs some laceration of the brain is generally present. In regard to the treatment, if it is localized, hemorrhage as from a blow, operate as soon as the localizing signs will enable one to locate the clot. In such cases, we think we can give a favorable prognosis. But if following a severe injury, the hemorrhage is profuse, it may extend over nearly the whole half of the cerebrum, operation may do some good in relieving the intra-cranial tension and for drainage, but the prognosis will be very unfavorable.

Concussion of the Brain; By concussion of the brain, we mean a state of unconsciousness into which a patient falls after an injury and before enough hemorrhage has taken place to cause symptoms of compression. It may or may not be associated with fracture. The striking feature about concussion is the loss of consciousness right after the injury, usually without the loss of power of the voluntary muscular system.

Report of a case. Mr. P., switchman, a few weeks ago fell off a box-car. I arrived a few minutes after the accident and found

the man unconscious, he was sent at once to the hospital. I found the following symptoms: temperature a little subnormal, pupils dilated, but reacted to light, respiration a little slow, pulse about 70 without increase of tension, the surface of the body was pale and cold. Raise his extremities and you would find they still had their power. There was no paralysis. Place a spoonful of water in his mouth and he would swallow or spit it out; he would respond to loud calling, pinching the skin or touching the conjunctiva. After a few minutes in the hospital, he began to rouse himself, groan and move his extremities and roll around in bed and open his eyes and appear unconscious of his surroundings. He gave his name, but when asked in regard to how the accident occurred, he had no recollection of it. The first few days after the accident, he complained of slight headache and some dizziness. On the tenth day, he was discharged, but he was still unable to tell anything about the accident.

Fracture at the Base of Skull: The anterior fossa is marked by the lesser wing of the sphenoid; the middle fossa is bounded by the lesser wing of the sphenoid in front and the petrous bone behind; and the posterior fossa extends from the petrous bone to the lateral sinus behind. The fractures are not necessarily limited to a single fossa. The line of fracture most frequently passes through the middle fossa, breaking the petrous bone at its weakest part, which is in the neighborhood of the middle ear, consequently there is great risk of septic complications. Fractures of the base are nearly always compound, also in a majority of the cases they are independent of fractures of the vault. Fracture of the anterior fossa becomes compound through opening into the sphenoid sinuses or upper nasal passage, therefore blood and cerebrospinal fluid passes through the nose. Fracture of the middle fossa, as a rule, involves the petrous bone, therefore becomes compound by communication through the external auditory canal, from which blood and cerebrospinal fluid escape. Fracture of the posterior fossa remains simple unless the

basilar process be broken and the pharynx be opened. In the average case, we find the patient lies in a state of profound coma from which nothing will arouse him. The pulse is full, strong and slow, the temperature is slightly elevated; respiration is slow, deep and stertorous; cheeks are puffed; reflexes are abolished; pupils dilated and usually fixed and do not respond to light; and if you place water in the mouth of the patient he cannot swallow.

Taking up some of the symptoms of most striking character we have:

Hemorrhage: In the anterior fossa, there may be free bleeding from the nose, due to a fracture through the cribriform plate of the ethmoid; but some of the blood may pass backward into the pharynx, then swallowed and perhaps subsequently vomited. However, the line of fracture more often passes across the roof of the orbit, blood escapes into the orbital cavity; then we have ecchymosis gradually making its appearance beneath the skin of the eyelids and also beneath the conjunctiva, but the effusion rarely extends above the cornea.

In the middle fossa, the blood escapes from the ear, but it may also run down the Eustachian tube into the pharynx and may appear in the nose or mouth. In every case of hemorrhage from the ear, it must be positive that the blood does not reach the ear from without.

In the posterior fossa, bleeding is usually subcutaneous, showing around the mastoid process and along the muscles at the back of the neck, and ecchymosis may not show itself for several days.

The appearance of Cerebro-spinal fluid is one of the most positive signs of fracture of the base, especially if the discharge from the ears follows prolonged hemorrhage. Cerebro-spinal fluid escapes most frequently from the ear, sometimes from the nose and very rarely the mouth, although it may reach the latter through the Eustachian tube, or from a fissure opening in the sphenoidal cells. It passes to the nose from a fissure through the ethmoidal cells. The flow may appear right after the accident,

but in some cases it may not appear until several hours afterwards. The flow is temporarily increased by sneezing, coughing and vomiting. The amount may be small, but sometimes it comes away in large quantities. The fluid at first is red, being mixed with blood, later it becomes clear like water. The fluid is recognized by the large amount of salt which it contains and by its low percentage of albumin which distinguishes it from blood serum, it is alkaline in reaction and of low specific gravity.

Nerve Injuries at the base of the skull are very likely to result when the line of fracture runs through the foramina of exit where the nerve would be lacerated, crushed or compressed, producing paralysis on the same side, and the exact situation of the fissure may thus be determined. We also have paralysis due to the injury of the brain itself, as suffusion of blood and laceration of the brain; in such cases the paralysis is on the opposite side. The nerve most commonly involved is the facial as it passes through the aqueductus Fallopii, and we would more than likely have paralysis on the same side. The involvement of the second, third, sixth and eighth nerves have all been observed as the result of fracture of the base. In looking over the recent literature, it is surprising to notice that the mortality has dropped from 90 per cent to the neighborhood of 50 to 60 per cent. This is due mainly to the decompressive operation. The Boston City Hospital reports 59 cases operated upon with a mortality of 53 percent. Cincinnati Hospital operated upon 19 cases, with a mortality of 63 percent. Cushing of Johns Hopkins' Hospital has the most remarkable result, losing only two of the last 15 cases of basal fracture.

Treatment: The three prime indications in surgical treatment of fracture of the base are: Asepsis, Relieving Compression and Drainage.

Asepsis: In case the fracture communicates with the nose, the nostrils are sprayed with mild antiseptic solution, gently dried and packed with sterile gauze, the packing should not be very tight, the idea is to filter all the air reaching the seat of fracture. In

the middle fossa, first place a little piece of sterile cotton in the canal of the ear, then wash the whole outer ear with green soap and sterile water, then remove the cotton and douche the canal with warm normal salt or boric acid solution and insert gauze loosely into the canal. Now fluff gauze on this and retain with a bandage. Compression is relieved by the decompressive operation and lumbar puncture. Most fractures involving the anterior or the middle fossa, the operation would be subtemporal trephining in the temporal region with drainage. Cushing advises, on both sides with fracture of the posterior fossa, the operation should be occipital decompression with drainage.

Cases with dilatation and fixation of both pupils, deep coma, rapid rise of temperature and stertorous breathing are rarely benefited by operation. Now, we often see cases in which the coma is not profound after the accident, but later grows gradually or suddenly worse showing signs of increased intracranial pressure, then operation with drainage will save many of them.

Lumbar puncture should be done for diagnostic and therapeutic purposes; it is a positive means of distinguishing sub-dural hemorrhage from supra-dural, also it diminishes the intracranial tension. Ransohoff uses repeated lumbar puncture in cases in which the coma is not profound, and claims that this takes the place of the decompressive operation.

DISCUSSION.

Dr. Jere L. Crook, Jackson.—I have enjoyed very much the concise and clear discussion of this extremely important subject which Dr. Eve has brought before us. I wish to emphasize one or two points as I have some positive opinions with reference to the attitude of surgeons who first see these cases of injuries of the head. To my mind this attitude should be very similar to that of the man who receives for treatment a case of gunshot or stab wound of the abdomen. Every case of doubt with reference to whether or not there exists a fracture of the skull on the surface should be converted into a certainty at the very first opportunity. Amplifying that somewhat more, when a patient is brought to your office or to a hospital with a head injury, if you cannot positively determine through an opening in the skin whether or not there is a fracture of the skull, having

in mind the best interests of the patient and your own reputation, you should not stop short of operation, but enlarge the opening, if there be one there; and if there is no solution of continuity in the tissues and you are in doubt, the scalp should be shaved, and there should be an exploratory incision made down to the skull in order to determine by ocular inspection whether or not there exists a fracture complicating the injury. The idea of waiting for symptoms of intracranial pressure or cerebral compression to develop before doing anything is just as foolish as to wait for symptoms of general peritonitis before operating on a case of gunshot wound of the abdomen. In the first place, the time when you have a reasonable opportunity of doing a successful operation and curing the patient is before any sepsis occurs and before any secondary symptoms develop.

Dr. Eve has brought out very clearly the difference in the symptomatology of compression and concussion. If there is a tumor or lump produced by the rupture of a blood vessel between the scalp and skull, and the case presents suspicious symptoms, then we need to shave the scalp, incise the hematoma, clean it out, using rubber gloves, pull flaps down with retractors, and see whether or not the skull is injured. Experience has convinced me of the necessity of this important procedure where we desire to sustain our own reputations as surgeons, and if we desire to give the patient the best chance for recovery. A great many cases of epilepsy are due to negligence on the part of the surgeons who first treated the cases. Case after case will present no symptoms of skull injury, yet careful examination under general anesthesia, if necessary, or even cocaine, if you enlarge the existing wound and look at the skull will disclose a fracture of the skull. These are the cases that get well without any general inflammation of the brain and its membranes, but lead to secondary manifestations going under the name of traumatic epilepsy, and every single case of the latter is due to carelessness on the part of the surgeon who treated the patient. I have in mind three recent cases illustrating this subject. One was a case where the skin was hardly broken, but by shaving the scalp and making an incision down to the skull we found a skull fracture. Another case was where the patient was able to walk and get into a buggy when he was perfectly conscious, but before he reached my office he was comatose. I subjected him to immediate operation, and found a rupture of the middle meningeal artery and extensive fracture of the skull. I tied the middle meningeal artery, washed out the clot, removed the fractured bone, and the patient recovered. In another case there was fracture of the inner table alone with resulting paralysis. In this case my diagnosis was made by the focal symptoms some time after the injury, but the focal symptoms did not develop for several hours afterwards. After these symptoms develop, immediate operation is indicated. We have not done our duty to each case that is brought to our

offices until we determine at the time of the first examination, or as soon as a convenient place can be secured, under the best possible aseptic technic, the exact status of the case starting out with the idea of doing a major operation, with the operating room in proper condition, so that we can meet whatever exigency presents itself.

A negro was brought to my office a few days ago with a fracture of the skull, so profoundly unconscious that it only required a few drops of ether to finish the operation without further anesthesia. He was struck over the parieto-occipital region, and for a short time stopped breathing. This case was reported in the *Journal of the American Medical Association*. For seven minutes he did not breathe according to the watch, except under artificial respiration, but at the expiration of that time normal respiration was resumed and he got well much to my surprise.

The paper is one of extreme interest, and the attitude of the surgeon towards these cases is one of paramount importance, both to the patient and the reputation of the surgeon.

Dr. E. T. Newell, Chattanooga.—I have enjoyed listening to the paper of Dr. Eve very much. It is one of the best papers that has been read before this association. The paper is well worthy of discussion, although it is so complete that very little can be said on the subject except to add strength to the statement that these injuries to the head, where there are no perceptible signs of injury, may not mean necessarily a depressed fracture. We may have a fracture of the inner table, and when this heals, little projections downward are left that may irritate the brain and very often are the cause of epilepsy.

Dr. Crook spoke of operating on these cases rapidly and of operating on almost any case that presents itself. I want to bear that out. There is no chance for the patient in many of these cases without operation. I remember very well the case of a child that fell forty feet from a new building. Two or three doctors were summoned, all reaching there together. The child was practically pulseless, with blood running from the nose and ears, and one could feel the bones in the head rubbing against each other, as if there was a pulpified mass. It was decided that nothing could be done for the child. I had the child removed to the infirmary, and found on making an incision there was a fracture of the external orbit through the temporal bone down to the occipital bone and to the mastoid, and four cross fractures. We expected the child to die on the table. But we leveled up the bones, did as little as we could, thinking the child would die anyway. When taken off the table we found the little girl had a fracture of the thigh, and we thought that there was no use in fixing the thigh, as she would die in a short time. However, we put a temporary bandage on the femur, put a pillow underneath, and straightened it out, thinking we would let her die at all events with a straight leg. At two o'clock in the morning the child was con-

scious and has been so ever since. The paralysis of the face under galvanic treatment has disappeared, the fourth nerve is the only one affected in the eye. This case shows that the worst cases you can get hold of sometimes offer an opportunity to do good work, and I hope any of you, especially those of you who are in close touch with surgeons, will take such cases to a surgeon, because even if you are afraid they will die, some of them can be saved.

Dr. John A. Gaines, Nashville.—I want to commend Dr. Eve's paper for its excellency and for the position he has taken in regard to head injuries. I also want to emphasize the attitude Dr. Crook has taken, which is absolutely, I think, the only tenable position. I hesitate to consume the time of the society in the report of a case which illustrates very forcibly some of the features brought out, but I hope I will be indulged to do so.

A young man, twenty years of age, was playing baseball with a local team in an adjoining city, was struck in the left temporal region with the baseball from the pitcher's hand. He was immediately rendered unconscious, but in a short time regained consciousness as though he had simply a concussion of the brain. He was brought into town, was able to talk to a limited extent, there was some disturbance of speech, but the latter was the only symptom. His temperature was normal, his pulse was normal, pupils were equal, there was absolutely no paralysis of any character, and the only symptom, as I have said, was a disturbance of speech. He was carried to the hospital, and I watched the case. Over the site of injury there was a slight swelling, not extensive, but putting the hand under the edge of the masseter muscle, bone could be felt, but no depression made out. The following morning the symptoms not clearing up, in the absence of other symptoms, except the disturbed speech, I opened up the area. A surgeon of considerable experience, who was in the hospital at the time, asked the privilege of seeing the operation, but he positively disagreed with the idea of operation at all. However, I followed the idea that the essayist and Dr. Crook have suggested, and raised a horseshoe flap over the area to find a depressed egg-shell fracture of the skull the size of circumference of a baseball. I raised the bone and finding the middle meningeal artery was cut and plugged by one of the pieces of bone, the moment the bone was released a large hematoma developed before I could divide the dura and ligate the vessel. For ten days the patient was only able to say, "Oh, yes." He was perfectly conscious, and at no time did he show any mental symptoms, and he has recovered in every particular. That was a case which gave ordinarily insufficient evidence for an operation, and yet feeling, as I do in cases of this character, it is wiser to know definitely the condition that exists. While this patient was a man twenty years of age, his skull in this area was thin. It was not more than one-quarter of the thickness of the average skull. That is a feature we have to consider.

In opening the skull and in making an extensive division, I found the Devilbis instrument would not reach through the skull in a white woman of small stature. The question of the amount of traumatism inflicted upon the skull is not an absolute guide because of the fact of the difference in thickness of the skull and the condition of the bone at the time, and again on account of the fact that the symptoms are not always present when you have a fracture until too late to be of actual service, and I can only give my most hearty endorsement to and acceptance of the principles that have been laid down.

Dr. W. H. Witt, Nashville.—This subject is of particular interest to me on account of a recent occurrence in a child four and a half years old, in good health except it had been a little bit restless that day, although the restlessness was attributed by the family and by the physician to the child being confined to the house. But called to see the child later, it having been confined to the house that day and previous days, nothing of any importance was attached to the fact that the child wanted to get out. The child had eaten no dinner or very little. At about five o'clock in the afternoon the child, while playing fell forward heavily, the fall producing a bruise on the side of the face, but otherwise there were no external injuries. The child seemingly was none the worse for the accident, but was not playful after that. The child went to the table at supper time, and after supper laid down, shortly after which the right arm was convulsive. At about the same time there were convulsive efforts in the right side of the face and in the right leg. These continued for some minutes. Two physicians were called, of whom I was one. When we reached the child it was unconscious with its head turned towards the right side, and the right arm perfectly limp, the left leg being moved a little and probably a little bit spastic. The knee jerks were present and exaggerated, but there was not that flaccidity about the right leg that there was about the arm. The face was not drawn. The eyes were deviated strongly to the right side, the side on which the convulsive seizures had occurred and on which there was temporary paralysis. These symptoms seemed to me and the other physician capable of being explained on the basis of an irritative lesion in the motor area on the left side. Even the deviation of the eyes towards the right side and the paralyzed side were so explained. Ordinarily when a hemiplegic stroke occurs, the eyes are deviated toward the side of the lesion. The deviation of the eyes toward the right side was so constant that we considered it due to an irritative lesion. Notwithstanding this patient was a child, whose bones are more or less elastic, not easily fractured, and notwithstanding there were no symptoms of severe injury, some two hours after the accident occurred we took the position that the child had a hemorrhage about the cortex on the left side in the motor area; that it was an irritative lesion which produced the convulsion. There was no evi-

dence of fracture at the base of the skull. On that basis we advised operation, and waited further consultation. All of the physicians who saw the case felt that the child should be operated on. The pulse was practically normal, although a little fast. It was quite irregular at the time we saw the child. After observing the child for ten minutes another convulsion occurred, beginning with slight irritative movements about the foot and the hand and the face began to twitch, the mouth being drawn with successive jerks. These convulsive movements lasted ten minutes and were quite severe, leaving the child more prostrated and with more difficulty in breathing. After fifteen minutes of intermission there was a recurrence of the convulsion, which was active for fifteen minutes. At that time the child was carried to the hospital, with the right side toward me all the way, and the convulsive movements continued in the leg and arm. After the child reached the hospital the convulsions became temporarily more severe. They were quite active and very distressing. At the close of the convulsion the child was in a desperate condition, with the heart beats approximating 180, the respiration quite irregular both as to depth and frequency. We expected the child would die. However, within the next fifteen minutes the pulse came down to 130, and meanwhile we were preparing to operate. The nurse came in to bathe the child's head. As the nurse came in I observed that the convulsions were transferred to the other side. We decided it was not a case for operation. The hemorrhage had been so extensive, or the irritation at the base of the brain so extensive that we decided not to operate. This convulsion was quite distressing, lasting fifteen minutes, and left the child again in a bad condition. However, from that moment improvement began, and in two days the child was practically well and remained so up to this time.

We have to consider one or two things in connection with this case. Was this a toxic convulsion? And if so, why was it toxic? My observation is that toxic convulsions are bilateral, but where the convulsion is unilateral we have a right to consider it due to focal irritation or injury of some kind. I am not able to explain why this child had these convulsions. I believe that while the diagnosis of hemorrhage of the cortex was incorrect, the injury in some way produced convulsions, but operation was ill-advised. If the circumstances were such that the child could have been operated on promptly, it would have been done, but I take it there would be no advantage or disadvantage in so doing.

Dr. R. W. Billington, Nashville.—The most important feature of this paper has not been discussed, and that is the treatment of basal fractures. These cases, formerly treated without operation, were almost hopeless, but it has been shown that practically 50 per cent of them can be saved by timely operative interference, and in the case operated upon by Dr. Cushing the mortality has been reduced to 15 per cent, so that

operative treatment in these cases as outlined by the author, is well worthy of consideration. Where a case will admit of any operation at all, it is entitled to treatment by decompression or spinal puncture, or both. That point, it seems to me, merits more discussion than it has received.

Dr. William Litterer, Nashville.—I would like to ask Dr. Eve if he has had any experience in the use of urotropin in these conditions with especial reference to basal fractures?

Dr. Eve (closing).—I have had no experience with the use of urotropin in these cases. So far as Dr. Witt's case is concerned, I am in the same boat with the rest of you. However, given the history of a child being sick more or less all the afternoon, and did not eat any dinner, it seems to me the condition would be more or less a toxic one and not due to a brain lesion.

POST-ABORTIVE SEPSIS.*

BY CHARLES A. ROBERTSON, M. D.,
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Post abortive sepsis is a subject of very great importance to every physician, and merits his most serious consideration, in order that he may avert disaster, when life is threatened by what is not infrequently a most malignant intoxication, producing the gravest danger to the patient. Therefore I offer no apology for inviting your attention to this subject to-day.

Sepsis following the interruption of utero-gestation at any time, or during the puerperium for that matter, may be divided into two classes, namely: Sapræmia, or that which is due to the absorption of decomposition products from rotting, or decomposing products of conception—saprophytes. True sepsis, or septicaemia, which is produced by the invasion of the systemic circulation, via the utero-genital route, by certain micro-organisms of more or less virulent pathogenic capabilities.

There are several varieties and classifications in the nomenclature of abortions, but I will not burden you, nor consume my time in a dissertation upon this phase of the question, but shall be content to speak of only two varieties; Spontaneous and Induced.

Spontaneous abortion is but rarely fol-

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lowed by infection of any character, and this is particularly true of the sepsis of bacterial origin, or true sepsis. Therefore most of what I shall say in this paper is directed at those cases which are induced criminally, or otherwise. I say "Criminally or otherwise" for the "otherwise" abortion—the therapeutic abortion is so rarely seen, that for all practical purposes it can very well be left out of this discussion.

It is indeed a sad commentary upon the manhood of our profession; a great reflection upon the honor and culture of our proud Southland, to admit that there is in almost every midst men who have been honored by medical faculties and the licensing boards of the commonwealth by conferring the right to practice honorable medicine, who daily stultify themselves and disgrace the profession which honored them, and made their existence possible. Oh what base scoundrels they are; robbed of the last trace of self-respect and decency, with a conscience as unimpressionable as a stone, for the sake of a few dollars they not only commit murder, but plant the seeds of chronic invalidism and thwart that Divine mandate which teaches us to multiply and replenish the earth. He who will induce an abortion with criminal intent should have the lashes of a veritable Hellfire upon his physical back for an eternity, and the profession upon which he has brought disgrace, should spurn him for evermore.

Since the criminal abortionist exists, we must of necessity have post abortive sepsis in all of its virulence, and too frequently followed by great and sad disaster.

Sapraemia is quite common in the course of an incomplete abortion, perhaps of days, or weeks duration, usually develops suddenly with a chill, oft times repeated, or displaced by rigors, followed by high fever (103, 4 or even 5 degrees) with a full, but rapid pulse, profuse, and at times drenching sweats, and more or less prostration.

The lochia is more or less free, often amounting to a hemorrhage, of foul odor, and when scanty of a dirty brown or chocolate color. There is more or less pain and

soreness, and distress in the pelvis, frequently intensified upon one or the other side.

The clinical picture presented by these cases is often of an alarming character, but to the experienced obstetrician, the prognosis is quite good, and the indicated treatment not a matter of doubt.

The proper toilet of the uterine cavity is of itself quite sufficient to bring about a prompt and satisfactory recovery. Inasmuch as there is some difference of opinion as to the best manner of making this toilet, it is perhaps, not out of place to have something to say upon this point. In cases seen early in the course of post-abortive sepsis, I am strongly of the opinion that the uterine cavity should be thoroughly emptied of its contents in the most convenient and effectual manner, followed by a free irrigation with sterile water, or perhaps with a 2 per cent solution of creolin, if there be a foul smelling odor, and a copious swabbing of cavity of the uterus with tincture of iodine. The question of gauze packing is a matter to be decided by the individual operator, in connection with the control of hemorrhage, but for no other purpose. In my own experience this procedure is very rarely called for.

Within 24 hours as a rule, if you have to deal with a saprophytic intoxication, the temperature falls to normal, and the patient makes a speedy recovery.

True sepsis, of bacterial origin, presents a very different condition of affairs, and is perhaps, one of the most fatal of the acute infections with which women suffer, and you do well to bestir yourselves in arranging your munitions of warfare in making your attack upon the enemy, for no where in obstetric surgery, does prompt, sane and thorough work count for more good in life saving, than in combating septicæmia following abortions.

The bacterial elements entering into this form of sepsis, may be mentioned in the following order of their importance, and the particular micro-organism doing the mischief, modifies the prognosis within very

narrow limits, but however, it does do so to some extent.

The *Streptococcus Pyogenes* gives us the most malignant, and dangerous form of sepsis, while that of the *Staphylococcus Pyogenes aureus* and *albus* and colon bacillus follow a close second. The gonococcus is some times present, as a coincident meddler, or may be the sole infective agent, and seems to have a special predilection for metastatic foci in the joints.

The bacillus *areogenus capsulatus* is rarely encountered in post abortive sepsis, but when present in sufficient numbers, is doubtless the most virulent and destructive of all, running a rapid course, and usually results in the death of the patient.

The symptomatology of true sepsis is interesting, and not nearly so marked and alarming to the untrained eye, and for that reason, these cases do not always come under observation as promptly as do the sapraemic type.

Within 48 to 72 hours after the introduction of the infective agent, or the filthy and uncleanly contamination of the patient there is usually a chill, but the chill may be supplanted by a rigor, or a chilly sensation, or perhaps absent altogether. There is a fever of moderate severity, associated with marked depression of the patient, and a weak rapid pulse. The features are pinched and the skin is dry and hot. In other words, a condition of asthenia as contrasted with the sthenic picture produced by sapremia.

There may be, and usually is, no odor at all about the uterogenital tract, and not infrequently the uterus has already completely emptied itself of all offending material, but in many cases retained products of conception may be found, undergoing putrid changes, and giving a mixed type of intoxication, with the consequent blending of symptomatology.

The treatment of these cases requires the keenest observation, and the soundest judgment, much harm can be done by injudicious procedures. Just at this juncture, I would like to say a word as to what might be properly termed prophylaxis. In those abortion cases seen early, and before the

development of sepsis, when it is ascertained that the abortion is inevitable, it is my custom to advise the operative completion of the abortive process under strictly aseptic, surroundings, in a well equipped hospital, leaving the uterine cavity sweet and clean, and thereby positively preventing sapraemic intoxication, and to a very great extent minimizing the dangers from septic infection. I never leave such cases to nature, and I think it is exceedingly unwise to do so.

We come now to the consideration of a most important problem, and problem it is, for the solution of which is often a difficult matter. What is the proper therapeutic regime to be inaugurated for the purpose of safeguarding the patient's best interest?

In the first place I will say candidly, that the point of primary disturbance, should have our first attention, and if there is evidence indicating that the uterine cavity contains intoxicating material or matter deleterious to the patient, it should be removed under the most favorable surgical conditions possible, with the strictest regard for asepsis, and skillful technique.

Shall we use the curette, or rely upon the finger and placental forceps in the treatment of the cases within the purview of this paper?

As surprising as it may seem, this is a much mooted question.

There are some good obstetricians who maintain that the finger is the only instrument required, and condemn the curette in the strongest possible manner. There are some who go so far as to assert that the curette should never be used in a post abortive or puerperal uterus, claiming all kinds of disadvantages and dangers in the procedure. I have great respect for my confreres upon the other side of this question, and to him who claims the ability to always thoroughly and effectually empty the aborting uterus of its contents in all stages and conditions with the unaided finger, I remove my hat and bow in graceful recognition of his superior skill, and digital dexterity, for such I have not been able to accomplish.

Granting such to be a possibility even in the majority of cases, I then argue that better aseptic technique is not only possible, but quite certain, and in my hands the operation of curettage has been ideal, and entirely free from danger, when done under proper aseptic precautions, and with hospital facilities, which I insist should always be had when available. Whether the curette shall be sharp or dull, depends somewhat upon the choice of the operator, and the case in hand. As a rule, I prefer the dull curette, but in certain selected cases I do not hesitate to use the sharp one and I feel that I do so without the slightest injury to the patient. In this connection, I will state, that in my opinion, the operator who can not use the sharp curette with safety, should not use a curette at all, for it can not be gainsaid that there is great danger in the curette, as with any agent or instrument, if used improperly and unskillfully.

There are cases, however rare, in which we have to deal with a more or less mild streptococcal infection, and more or less necrosis of tissue at the placental site, in which the so-called leucocytic infiltration zone acts as a barrier to septic infection, and exerts a definite protective influence, which, following curettement, grows rapidly worse, and seems to owe its fatality to the operation, which opened up new avenues of infection.

I am rather inclined to the view that the aggravation and fatal termination of these cases is due more to incomplete and untimely surgery, than otherwise. Of course, I can conceive of cases in which such interference would be unwise, but they are exceptions to the general rule, and demand very careful discrimination, and the exercise of one's best judgment in arriving at the proper conclusion as to a choice between curettement and a *laissez faire* treatment. In such case and the exigencies seem to demand radical measures, hysterectomy may be thought of in selected cases where at least the greater amount of the infection is limited to the uterus.

Packing the uterine cavity with gauze,

around a soft elastic catheter through which the packing is kept saturated with a 50 per cent solution of alcohol, is to my mind an irrational procedure, and with better methods available, is wholly unnecessary. This is known as the method of Carosso.

Vaginal section and drainage after the method of Pryor is quite unnecessary in the average case, and should be limited to those cases where there is evident fluid collection in the Cul De Sac of Douglas. In such cases a free incision, with ample fan tail gauze drainage is clearly within the limitations of sound and rational surgical principles.

In all cases after curettement is done, the toilet should be completed as previously described, and case submitted to systemic treatment and general care.

Supportive measures are of the greatest importance, and I would call to my aid all such remedial agents as strychnia, alcoholic stimulation, salines by proctoclysis, or hypodermoclysis, nutritious alimentation, and any and all rational supportive measures calculated to stimulate the fires of life to the consumption of the systemic toxicity, and ultimate recovery of the patient.

In the latter part of 1903 Dr. Joseph Hume, of Johns Hopkins Hospital, did some rather encouraging work in the treatment of general infections by the intravenous injection of silver nitrate with 1cc. of a 10 per cent solution in 1000 cc. of water, giving 500 cc. at a dose, repeating two or three times as required, relieving some severe toxic cases, and having some exceedingly brilliant results, but my own experience of one fatal case is too meagre for me to judge of the merits of the plan, however, it is safe to say that it has not been generally adopted.

With the sera and autogenous vaccines my experience has been very limited, yet I am convinced that they are of but little, if any value. I might also state so far as I know there are no remedies of value in the treatment of true sepsis, acting specifically upon the toxines, leucocytes, or in liberat-

ing anti-bodies. All such are but the fanciful fruition of an altruistic hope for the realization of dreams utopian.

THE SIGNIFICANCE OF THE TONGUE IN DIAGNOSIS.*

BY H. E. CHRISTENBERY, M. D., LONSDALE,
TENN.

In dealing with this subject, it is not my intention to probe it very extensively. I mean only to take up some of its most important conditions in diseases, which we as physicians, are growing in the habit of neglecting. Too often we hurriedly examine our patient, and if the tongue is even considered, it is given only a passing glance. Probably, in examining the throat, we observe the tongue if its condition is such that we cannot avoid it.

With new instruments and devices at our command, we are more than likely to overlook its great importance in diagnosis, and I fear we thereby lose a great feature that would aid us materially.

In my opinion, the tongue is the index to most important internal troubles, and though its condition is not always a sure guide, it is far too important to be overlooked; it is the signboard that points out the ways and avenues of intestinal troubles more than any other one factor.

Were we to follow more closely the points of diagnosis given us by our preceptors, and add to them the more modern methods as they prove themselves worthy, without a doubt, we would be better diagnosticians, and naturally get better results from treatment, having a fuller idea of all organs affected.

It is to be remembered that it is not the thickness, nor the amount of the coating of the tongue—but the character of it—that counts most in diseases of the digestive organs. A patient could have a heavily-coated tongue from a slight stomach disorder, and the sole cause of it be the result of bolting his food—or, more properly speaking

—from lack of thorough mastication. Most patients who suffer from chronic dyspepsia attach a great deal of importance to the appearance of their tongue, and many physicians gauge the seriousness of the affection by the respective thickness of the coating. This is an error, except it be reversed; for a heavy coating usually denotes a systemic disturbance that is more functional than organic, and can be, in a great measure, relieved by a strict adherence to the rules of mastication—as mastication mechanically cleanses the tongue. Proper mastication means better assimilation, and good assimilation means less stomach trouble—and there you have it—each point so depends upon another that not one can be overlooked. This reasoning leads to the conclusion that a heavy coating is usually indicative of a slight disorder that could be overcome by systematic living, without much medical aid, and such can be the case when there are no conflicting characteristics. In most acute diseases the patient suffers from lack of appetite, and the tongue, consequently, is heavily coated; while in chronic diseases, when masticating solids at each meal during the day, the tongue may show only a scant coating, while the patient may be the victim of a most aggravating malady; hence the necessity of keeping in mind all characteristics and peculiarities. All diseases, whether acute or chronic, show an otherwise than normal tongue, so I repeat that the tongue is an index.

I will now mention a few of the most important conditions of the tongue as we find it in various diseases:

1. A tongue showing a decided redness along the center indicates intestinal irritation and is an early sign in typhoid fever. If the surface is glistening the condition is unfavorable, while a cracked surface indicates a more or less serious kidney trouble.

2. A bluish tongue denotes impeded circulation, and is usually attended by interference of the respiratory organs, indicating heart trouble and asthma.

3. A beefy tongue is shown in chronic

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inflammation of the bowels and mucous surfaces.

4. A brown coating or fur is indicative of neurasthenia and intestinal putrefaction; the deeper the color, the worse the omen, and if the tongue is dry, with fissures, it denotes a very grave condition. Unilateral furring may result from disturbed innervation, as in conditions which affect the second and third branches of the fifth nerve, as is sometimes noted in severe cases of neuralgia.

5. A light yellow fur is most usually an indication of a derangement of the liver.

6. A black coating, if there is any jaundice, denotes an organic disease of the liver. If in connection with smallpox, it is a most unfavorable sign, while in dysentery, it is an almost infallible sign of impending death.

7. A gray coated and flabby tongue, usually with an oval, bare spot in the center, which is red and glossy, is most often seen in children who are afflicted with gastrointestinal catarrh.

8. A lead colored tongue is found in cholera and some times in malignant diseases of the stomach and duodenum; if thrush appears in connection with it, death most usually follows.

9. The strawberry tongue—a white fur through which project bright red papillae—is one of the surest signs of scarlet fever and found mostly in children.

10. A scarlet tongue, especially if red at tip and along the edges indicates an acute inflammation of the stomach.

11. In cerebral and meningeal involvement, we find a trembling and sharp pointed tongue.

Now, a few words as to the importance of the manner in which the tongue clears—considered as an indication of recovery; if it clears slowly, beginning at tip and edges and regaining a natural appearance, permanent and uneventful recovery can be expected. A slower recovery is indicated by the fur coming off in patches, leaving a smooth red surface; while a shiny, cracked surface, with the fur rapidly disappearing, is very unfavorable, and indicates, most

certainly, that something is going wrong.

These are some of the conditions in which we find the tongue characteristic of the disease. I might mention more, but this is enough to impress the facts more forcibly on our minds, and perhaps help us to realize more fully the importance of the tongue as a factor in diagnosis.

Another feature that should not be overlooked or misconstrued, is the character of the tongue caused by simple neglect. The mouth is a hot-bed for numberless bacteria, and canker sores and ulcers of the mucous membrane of the throat and stomach, are often directly traceable to the unhygienic state of the mouth. A foul breath that might betoken a serious stomach trouble, is sometimes only occasioned by decaying vegetable or animal matter in the crevices of the teeth.

We, as physicians, ought to lay especial emphasis and give explicit directions to parents in regard to the care of the mouths and teeth of their children. Not many cases of thrush are found where the mouths of babies are given a daily wash with some good antiseptic solution. The fact of children reaching manhood and womanhood with a good set of teeth and healthy membranes, is due more to fortunate consequence than any effort on the part of parent or child; as very few persons pay the slightest attention to either the mouth or the condition of the teeth. It is a lamentable fact that their good teeth are more the result of chance than any expended effort on the part of anybody. They do not realize the great importance of it and it is our duty, as medical advisors, to urge the necessity of clean teeth and mouth hygiene as a preventative of divers diseases of the mouth, throat, and stomach.

In conclusion, let me again repeat that the condition of the tongue is a more important feature in the study of disease than most of us realize. So little importance is universally attached to it, that it is extremely interesting to pick up the different medical works and observe how few authors ever refer to it in any except typical diseases.

SARCOMA OF STOMACH.*

Case Report With Exhibition of Subject and Tumor.

BY JOHN OVERTON, NASHVILLE.

Sarcoma of the stomach is unusual under any condition, but still more unusual when the stomach is the primary seat of trouble. Up until the two past decades there were very few cases reported, probably not numbering more than forty. The largest number that I have been able to find reference to is one hundred and forty-six. Out of three thousand new growths of stomachs examined by Hosch only six were found to be sarcomas. In a comparatively recent review Fenwick claimed that only fifty-three authentic cases have been reported. He also believes that primary sarcoma comprises from five to eight per cent of all the tumors of the stomach. In looking up various articles on this subject we find that the classification, between any two, varies in some particulars. For practical purposes, however, we may divide the tumors into two groups: first, round cells, embracing also the lympho sarcoma. These are usually infiltrating or diffuse. Second, spindle cells and myo or fibro sarcomas. These are usually circumscribed and may either extend into the cavity of the stomach or toward peritoneal surface. The round celled tumors are much more frequent, and occur oftener as secondary than as primary growths. They are generally diffuse and hence are the most formidable variety. Microscopically they are practically indistinguishable from cancer. The spindle celled tumors are generally circumscribed and in most instances a mass is said to be palpable. These tumors may undergo various forms of degeneration. Perforation is said to occur in about ten per cent of the round celled variety. The chief dangers are metastasis and perforation, though at times the tumors may reach such a size as to seriously embarrass the function of stomach or adjacent organs. As to predisposing causes we are more in the dark than

we are in the case of cancer. It has occurred almost equally in the two sexes, and at any age, though, as a rule, it occurs earlier than cancer. We usually have some history of gastric disturbance, though the attachment of the tumor to the stomach has been found on operation when least expected. History of ulcer is uncommon. Hemorrhage from stomach and presence of blood in stool occur with fair frequency and with the spindle cell variety hematemesis is said to occur in fifty per cent of cases. Pain is a more constant symptom. It is noticed early and usually persists. Anemia comes early, usually lasts and at times may become quite severe. Slight fever is generally present. Vomiting is said to be rare. Symptoms of obstruction are uncommon, even with quite large tumors. If of long standing, patient is usually thin and much debilitated. Mass is discoverable in from thirty to forty per cent of cases. The tumor is most often situated near the greater curvature and on posterior surface. Involvement of either orifice is uncommon, though every portion has been found to be affected, and one case was reported where the whole stomach was involved from cardia to pylorus. Examination of stomach contents is usually the same as found in examination of cancer. Positive diagnosis is almost impossible before operation, and, as has been said, even when we hold the tumor in our hands frequently we can not differentiate from cancer. Other conditions to be considered are old ulcers, myomas and other benign tumors. Schlefsinger claims that the presence of a stomach tumor with metastasis in skin and enlarged spleen indicate very strongly sarcoma. Though we may not be able, with any degree of certainty, to diagnose sarcoma of the stomach, still where one is present the symptoms are generally suggestive enough of serious trouble to justify the exploration. All cases unoperated on die. The average duration of life in the more malignant cases is fifteen months; in the milder forms, two to four years. With operation the prognosis is more favorable than in carcinoma, because the tumor is oftener circumscribed, is less apt to produce

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metastasis, grows more slowly and is more susceptible to benefit from the use of the mixed toxines of the streptococcus of erysipelas and the bacillus prodigiosus. Unless we are positive that the condition has advanced beyond any hope of benefit by operation, we should make an exploration and do what may then seem best. The immediate mortality should not be over ten per cent, and where tumor is circumscribed should be very much less. Where condition appears to have reached the stage which justified us in considering it inoperable, whether we suspect sarcoma or carcinoma, we should give Coley's fluid a faithful and conscientious trial. Coley first began to use the mixed toxines sixteen years ago. Since then it has passed out of the purely experimental stage and now rests upon a record of one hundred and fifty or more remarkable cures, which demands that we shall embrace it for use in all suitable cases.

Case Report: Family and previous history unusually good with the exception of his grandmother, who is said to have had some peculiar symptoms referred to stomach.

Present History: In February, 1906, he went to work one morning in the mines, as usual, and after working a while he felt a little faint, nervous and short of breath. He went home about eleven and returned to work again that night. On leaving the mine about eleven p. m., he almost fainted. He continued to feel badly and became nauseated and vomited at little blood. He had several similar attacks before reaching home. Next morning, while standing out on his porch, he became quite sick, walked into the house and fainted, after which he vomited an unusually large quantity of blood, which left him in a serious condition. The blood was at first bright red and then slightly clotted. He remained in bed two weeks. He did not vomit any more during this time, had no pain, but stomach frequently felt full after eating. He thinks there was evidence of blood in the stool. Had no fever. Went to work in three months as foreman. In six months he was feeling very well, but his strength had not

yet returned to normal. During this time he does not remember any symptoms that pointed particularly to the stomach. He continued to work until the following February, when he remained in bed for several days because of severe cramping pains in pit of stomach. He did not vomit any blood, and does not think he passed any blood by bowels. Soreness remained for about two weeks. He went along fairly well until December 16, 1909, when he suddenly became sick while at work and vomited quite a good deal of blood. He vomited several times and suffered with cramping pains in the stomach. He went to bed and remained there two weeks and passed, during this time, blood by bowel. He did not work any then, practically, until July, 1910, because of the fact that he remained extremely weak. He had a little pain and discomfort all along, but they did not amount to much. In September he had another spell and vomited about a half pint of clotted blood. He remained in bed about a week. From that time he had a continual slight aching in pit of stomach. For a while this was slightly relieved by eating. No evidence that food remained in stomach longer than it should. During the two months preceding entrance to hospital pain had been felt several hours after eating. For several weeks past he frequently vomited after eating supper, also gave history of burning pain in pit of stomach, without eructation or regurgitation. For the last year, during these attacks of pain with stomach, he seemed to have such suffering that it would require a grain and a half of morphine to relieve him. He would become perfectly rigid, grind his teeth, talk irrationally and his father said that some times for hours you could hardly tell whether he was breathing, or not. A short time after eating supper on night of admission he began to suffer with cramping pains in epigastrium. This lasted three hours. He was given a grain of morphine with practically no effect. He vomited contents of the stomach, talked slightly deliriously, went into a tonic spasm, from which he got no relief until one tenth of

grain of apomorphine was given. After he recovered from his depression, he slept all night. Stomach was washed out, was given test breakfast and contents removed one hour later. Was given oil which had satisfactory effect. Was given a fair sized meal, stomach washed six hours later and found practically empty. Got along fairly well until the next day, when he had a similar cramping spell, which was relieved by one-twentieth of a grain of apomorphine.

Physical Examination: A white male, age 34, six feet tall, weight 155 pounds, erect, of fine form, a little weak and decidedly anaemic in appearance. Heart and lungs apparently normal. Abdomen flat, slightly tender on deep pressure in epigastrium, but no mass or fullness of any kind discovered. After going over case very carefully, I felt that his symptoms clearly indicated some pathological lesion of stomach, which I thought most likely was an ulcer. I so informed him, but added that I did not insist on operation, though I felt that we were entirely justified in making an exploration, even with the possibility of finding nothing that we could remedy. He accepted my view, and four days after admission, December 12, abdomen was opened. Nothing was found in region of pylorus or about gall bladder and ducts. The anterior surface of the stomach was then examined, and at a point half way between the two curvatures and junction of middle with right third of stomach a puckering was noticed, and from this was seen hanging free in the peritoneal cavity a thin flat mass about three inches in length. On grasping stomach about this point the tumor was felt inside. An elliptical incision was made through serous and muscular coats, these pushed back and mucous membrane cut through with scissors. After removal of tumor, an opening in stomach three to four inches in length was left. This was sutured in a line running between the two curvatures. Patient removed to room in good condition. Convalescence was most satisfactory. He retained about eight ounces of saline by bowel every two hours for two days. During the second day pan-

opeptone was given in conjunction. After the first twenty-four hours he took water by mouth. Feeding was then gradually and steadily increased without any unpleasant symptoms. He walked across room on third day without permission, was up within a week, left the hospital fourteen days after operation, feeling, as he expressed it, so well that he could hardly stay or the ground. He wanted to go to work ten days after getting home, but was restrained. He has, however, been at work since February first, and has gained twenty pounds in weight. After learning nature of tumor, administration of Coley's fluid was begun, which has been very kindly carried out for me by Drs. Mason and Breeding, of Ravenscroft, Tenn. The first dose of one-half minim unaccountably caused him a great deal of pain and a rise of temperature to 101. Dose was then gradually increased up to three minims or more without any more reaction. Treatment was started again from beginning with a new supply of fluid. This has gone up to ten minims without any reaction. Patient at present looks and feels unusually well.

Description of Tumor: Tumor was not weighed, but was about the size of a small orange. Twenty c. m. in circumference, ten c. m. in length, eight in width. Projected into stomach and was covered by mucous membrane except for a deep excavated ulcer $3\frac{1}{2}$ c. m. long and 2 c. m. wide. This ulcer was near center of tumor and reached to serous surface of stomach, where the tissues were so thin that you could see the light through them. Just opposite to this point on the serous surface was attached by a thin pedicle a flat anaemic mass, $4 \times 3 \times 1\frac{1}{4}$ c. m., which proved on examination to be an organized clot. Perforation must have occurred, but so small that the blood oozed very slowly through the opening, and formed a clot which afterwards became organized, without any attachment to any other organ except the stomach. Dr. Litterer made the pathological examination for me, and has done a great deal of work because of the unusual features found. Two entirely distinct

tumors seemed to be present, one of which he considers a round cell sarcoma, the nature of the other not being so clear. Photo micrographs have been taken. Work, however, on the pathology is not yet complete.

TWO OUTBREAKS OF TYPHOID FEVER IN AN INSTITUTION TRACED TO BACILLI CARRIERS.*

THOMAS WEAVER, M. D., NASHVILLE, TENN.

These outbreaks occurred at the Tennessee Industrial School, an institution that numbers about 800 girls and boys. The water supplied to the departments in which the outbreaks appeared is derived from the Nashville City mains, and all water is boiled before distribution. The school maintains a small dairy, but milk is not used, except for tea or coffee, outside the hospitals. The milk has never been under suspicion as a possible source of typhoid fever.

The first outbreak appeared in the white girls' department, and the first case was admitted to the hospital July 22, 1910. This was the first case of typhoid fever in this department since the fall of 1908. At the time of the outbreak there was not a suspicious case of fever in the school, and there had not been a case of typhoid fever in the institution since the preceding fall.

There were eight cases in this series, each of which gave a positive Widal reaction except one, in which a para-typhoid reaction was obtained. The cases were all mild; there were no deaths, and no complications.

The water and milk were excluded as sources of infection, and in the absence of any other cause Dr. Litterer suggested that the infection might be due to bacilli carriers. Investigation showed that three girls employed as helpers in the kitchen or dining-room had had typhoid fever. One of these girls, Mary L., gave a high agglutination test, and her opsonic index to the bacillus typhosus was likewise high (1.6).

Repeated examinations of her stools were then made, and Eberth's bacillus was finally isolated. Several specimens were examined before the typhoid bacillus was found, which proves that, while one may be a carrier, the presence of the bacilli in the stools is not always constant.

This girl entered the hospital with typhoid fever July 21, and was discharged August 27, 1908. She gave a positive Widal reaction, and the fever ran a fairly severe course without complications. After her convalescence she remained in the hospital about two months as helper; she was then employed in the dining-room, and worked there about six months, when she again went to the hospital. On July 16, 1909, she returned to the dining-room, where she continued to work until July 25, 1910; she was then employed in the kitchen, and remained there until August 28, 1910, when she and the other two girls above mentioned were removed from the culinary department. The last case of typhoid fever was admitted to the hospital August 26, 1910, two days before Mary L. left the kitchen. No other precautions were taken, and no suspicious cases appeared subsequently.

The second outbreak occurred in the white boys' department at the main building, and the first cases appeared October 28, 1910, when two patients entered the hospital, one of whom was an officer of the school. Suspicion was at once directed to the employes of the culinary department, despite the fact that I had formerly been told that none of the helpers in the kitchen or dining-room had had typhoid fever. Repeated inquiry, however, finally elicited the fact that there was a suspect among them. The blood of this boy was examined, and though the Widal reaction was negative, Dr. Litterer considered it quite suspicious. An examination of his stools was then made, and the typhoid bacillus was isolated.

In this outbreak there were nine cases, two of whom were officers who ate in a separate dining-room, where this carrier had been employed as a waiter during the four months just prior to the outbreak. This

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boy had a severe and protracted case of typhoid fever in the fall of 1909. Two of the seven boys were most likely infected in the hospital. One of them Hugh G., who went to bed November 15th, had been in the hospital with a fractured arm since October 29, and, despite the warnings of the nurse, he persisted in going into the ward where the fever cases were, and spent much of his time in close contact with them. The other boy, Roy M., had been in the hospital, either as patient or helper, from September 24, 1910, until he became sick with fever November 20, 1910. A positive Widal reaction was obtained in all but two cases, in which the test was not applied, as the clinical signs were unmistakable. One of these ran a protracted and severe course, and the other was successfully operated upon for an intestinal perforation.

The suspected carriers were removed from the culinary department November 15th, and the last case, Roy M., (mentioned above as one of the cases contracted in the hospital) was admitted November 20, 1910.

An examination of the blood and faeces of several other boys in this department, who had had typhoid fever, was made, and Eberth's bacillus was isolated from the stools of one, and the para-typhoid from the other. These boys were not employed in the kitchen or dining-room, but they had access to both places, and it is possible that the infection may have been transmitted through them.

We were unable to trace satisfactorily the source of infection in the five boys, who must have contracted the disease outside the officers' dining-room, or the hospital. We know, however, that it is a common practice for the boys to slip into the kitchen and dining-room to get food, and to voluntarily assist in the work. All the cases (except Roy M., who was undoubtedly infected in the hospital) developed within a period of eighteen days (October 29 to November 15), which would indicate, as Dr. Litterer suggests, that all were probably infected at the same time, though the incubation periods varied.

This outbreak was in striking contrast to the preceding one. In this series two cases died from profuse hemorrhages and pneumonia, the pneumonia appearing simultaneously with the hemorrhages. One had a hemorrhage with perforations on the 12th day of his illness (the ninth day after he went to bed); another had several rather free hemorrhages, and a fifth boy had a long and grave illness. The other cases ran a fairly mild course.

The following is a list of the cases in the two outbreaks:

First Outbreak.

Name.	Age.	Date of Admission.
Maggie H.,	14.....	July 22, 1910.
Lillian G.,	17.....	July 27, 1910.
Amanda S.,	14.....	August 6, 1910.
Cora F.,	14.....	August 12, 1910.
Mary H.,	13.....	August 16, 1910.
Ella Q.,	13.....	August 16, 1910.
Ethel B.,	14.....	August 20, 1910.
Sadie F.,	13.....	August 26, 1910.

Second Outbreak.

Rex P.,	14.....	October 28, 1910.
Stone McK.,	...21.....	October 28, 1910.
William H.,	...20....	November 12, 1910.
Arrie B.,	17....	November 12, 1910.
E. B. L.	19....	November 13, 1910.
Milton G.,	15....	November 14, 1910.
Elisha H.,	18....	November 15, 1910.
Hugh G.,	15....	November 15, 1910.
Roy McC.,	17....	November 20, 1910.

In the study of these outbreaks, and in the preparation of this paper, I am greatly indebted to Dr. William Litterer, not only for his careful and painstaking investigations, but also for his many helpful suggestions.

CONCLUSION.

These outbreaks of typhoid fever serve to emphasize several points that may well be remembered:

1. The question of bacilli carriers is one of very great importance, and should always be borne in mind in tracing the source of infection in an outbreak of typhoid fever.
2. The possibility of this danger should be considered in the employment of cooks, and other culinary employees, not only in

private families, but especially in institutions.

3. It should not be forgotten that the presence of Eberth's bacillus in the stools of bacilli carriers is by no means constant, and repeated examinations are frequently necessary for its detection.

DISCUSSION.

Dr. William Litterer.—The typhoid carrier without doubt is one of the chief factors in the dissemination of typhoid fever. Frosch has gone so far as to state that if we can eliminate the typhoid bacillus carrier we can get rid of typhoid fever. To Koch is given the credit of first establishing bacteriological stations throughout Germany for the study of typhoid fever and the keeping track of these bacilli carriers. The first experimental typhoid station of the German campaign was founded in 1903 under the directorship of Frosch. At the present time eleven are located at different places in Germany. The workers at these laboratories have added and are still adding a great deal to our recent knowledge on the subject of typhoid fever and of the typhoid bacillus carrier. In discussing carriers, it is well to classify them, according to Conradi, who has adopted the following classification:

(1) First Group—Primary carriers: Those carriers in whom the infection has not led to symptoms, including persons in the incubation stage of the disease.

(2) Second Group—Secondary carriers: Convalescents from typhoid who continue to eliminate bacilli for a period longer than ten weeks after the onset of the attack.

(3) Third Group—Tertiary carriers: Those carriers who continuously eliminate bacilli after the primary attack.

For ordinary purposes, however, typhoid bacillus carriers may be classed into two great groups, "Temporary" or "transitory," and "Chronic" carriers. The terms temporary or transitory carriers of the German writers are applied to convalescents, who cease eliminating typhoid bacilli before the end of the third month after the onset of the disease, while the term "chronic" carriers is applied to carriers who eliminate bacilli for an indefinite period.

Frequency of Carriers.—Ledingham has collected reports by a number of investigators to give some idea as to the frequency of carriers. Lentz examined 400 convalescents and found 1.5 per cent temporary and 3 per cent chronic. Klinger followed 482 cases of typhoid fever and found that 11.6 per cent temporary intestinal carriers. Bruckner examined 316 persons who had had typhoid fever in previous years and found 3.8 per cent to be chronic carriers. Probably the most thorough work on this subject is that by Semple and Craig, working in India. They found that of the 86 convalescents in which bacteriological examinations

of the excreta were made daily, 11.6 per cent eliminated bacilli for a longer period than six weeks after defervescence, i. e., chronic carriers. Tsuki examined 51 typhoid convalescents in the Japanese army and found that 5.8 per cent were eliminating typhoid bacilli beyond the transitory limit. Diagnostic methods employed in searching for carriers: In searching for carriers, in an institution, for instance, a preliminary Widal test may give line on a carrier. Although the Widal cannot be entirely relied upon, since about 35 per cent fail to show the test. I find that the Opsonic index test to be exceedingly reliable and valuable. After the preliminary tests have been tried and should they be positive or suspicious, then the bacteriological methods should be resorted to. Persons who give a typhoid fever history or who present symptoms of gall bladder troubles, their excreta should also be subjected to a systematic bacteriological examination. Of the many methods of isolating the bacilli, I prefer the Drigalski and Conradi method, likewise the Eudo plate method of isolation.

Treatment of Carriers.—The treatment of typhoid bacilli carriers has been far from satisfactory. Many drugs have been tried and found wanting. Salol, beta-naphthol, ealomel, bile and its salts, chloroform and other drugs have only a temporary effect in decreasing the elimination of typhoid bacilli in the stools. One cure was claimed by giving sodium salicylate for over one year. The surgical measures for the cure of carriers have been directed chiefly towards the gall bladder as the main seat of vegetation of the bacilli. In some instances the gall bladder has been drained, while in others it has been removed. A few have been cured, but the majority have obtained questionable results. Typhoid vaccines seem to offer excellent results in some cases, while in others no apparent benefit has been derived from its administration. I think the Autogenous vaccine (that is a vaccine made from the same person) should be tried in every case of a chronic typhoid infection. I have cured two cases of a post-typhoid necrosis by making an autogenous vaccine in which there were found pure culture of virulent typhoid bacilli. At the present time I am treating two cases of typhoid intestinal carriers by the autogenous vaccine. Apparently good results have been obtained, but time has not elapsed sufficiently to warrant definite conclusions.

Methods should be devised to diminish the spread of infection by carriers. A routine bacteriological examination of the excreta of convalescents should be made in order to determine the time when they cease discharging typhoid bacilli. When a carrier is discovered, suitable treatment should be instituted and should be kept under strict supervision. No carrier should be allowed to engage in any work necessitating them to handle or to prepare food. All carriers should have individual articles which they use in their everyday life, such as dishes, basins, towels, etc. Toilets used by carriers should receive regular and systematic disinfection and they should be required to disinfect

their hands after each visit to the toilet.

The typhoid station at Strassburg, one of the stations in Southwest Germany, issues a pamphlet which explains the carrier state and the danger of a carrier to the community, and gives full directions for carriers especially emphasizing the necessity for cleanliness and for strict personal hygiene.

"NEED OF REFORM IN PUBLIC SCHOOLS IN REGARD TO HYGIENE AND SANITATION."*

BY O. DULANEY, M. D., DYERSBURG.

This is one of the large and important fields in which the activities of the medical profession in the future are to be exercised. The best solution of this question will require a united profession, co-operating in closest harmony along all the lines of scientific, professional and political medical endeavor. One of the most important steps in the future preservation of health will be to begin in childhood, as this is a period of life in which the greatest susceptibility to disease exists. As this is the case the true field of prevention of diseases in childhood is obvious, and the medical profession should do everything in its power to cause and enforce such laws as are needed for the protection of school children for the preservation, promotion, improvement of health and prevention of disease and prolongation of life.

This needed reform can be brought about, first, by law to enforce the medical inspection of school children; second, to make a frequent inspection of the public school buildings—see that they are kept in a sanitary condition; third, to govern the construction of our school buildings in the future so as to meet the necessary hygienic and sanitary requirements; four, to amend the act of the Legislature providing for the State Board of Education by having three physicians appointed by the Governor of this State, one to be appointed from each Grand Division, as members of the State Board of Public Instruction. Such a revision would render a great service to our

State, and nothing could be of more practical value to the people from a hygienic standpoint.

MEDICAL INSPECTION OF SCHOOL CHILDREN.

Wherever this law has been established, it has speedily proved itself indispensable. It is not too much to affirm that any State not so provided is seriously handicapped. The importance of this question is realized by everyone of us, there is no need of citing facts on this subjects, and especially to those who have given this matter their personal study.

We are extremely fortunate at the present time to have a bill pending before the Legislature, and this topic has been touched on in the hope of stimulating all of my hearers to make a renewed and systematic effort to obtain its passage.

As to how this medical examination should be made, is indeed an important question for our consideration and will involve many difficulties. After a thorough consideration of this matter as to the advantage and disadvantages of the inspection to be made solely by the physician, it would probably meet with considerable opposition in the rural districts; but in the incorporated towns and cities the inspection should be made by a competent physician in every case. But in the rural districts where the attendance is small, the teachers can be instructed so as to make a systematic examination. This should be made at least once yearly. They would not be expected to make a diagnosis, but merely ascertain the fact of a physical defect, and send a card of warning to the parents, asking them to consult a physician. Then in a course of time we would have no trouble of supplementary examinations by a physician.

INSPECTION OF THE SCHOOL BUILDING BY A SANITARY OFFICER.

This is as highly important for the protection and preservation of health as a physical examination. One is inconsistent without the other. There can be no doubt in our mind but that many a person has contracted tuberculosis from the pernicious

*Read before the Tennessee State Medical Association, April, 1911.

habit of spitting upon the floor. Too little attention has been paid to chalk dust, which is a great source of annoyance both to the teacher and child. Too little attention has been paid to the water supply, and typhoid fever has often resulted from water contamination. No strict rules and regulations are made for the closet, and many other diseases are contracted from equally as careless habits.

CONSTRUCTION OF SCHOOL BUILDINGS.

It is a sad fact that most of our school buildings in the past have been built by men solely ignorant of the importance of light and ventilation and other hygienic measures such as are necessary for a sanitary building. We need and must have a law governing this construction. In the future all buildings should meet with the approval of the State Board of Education. They should also have the power to enforce the necessary changes needed to be made, regardless of how commodious or elegantly it may be furnished.

Entirely too many children have defective vision from poorly lighted school rooms. The medical profession should have some voice in regard to this matter; but in many instances the physician himself is not properly informed and has not the adequate conception of the actual condition of the public schools at the present time.

With the compulsory examination of the school children and the frequent inspection of the sanitary condition of the building, and the regulation of its construction by requiring in the future all plans and specifications to be approved by the State Board of Education, are matters for vital importance to the child, to the parent, to the school. The present status of the public schools should surely be raised, and that in the near future. The reason why thus far it has not been of adequate dignity, authority and efficiency, is, besides these here set forth, that its fundamental and vital importance has not yet been sufficiently recognized by the public. Our health officers have been without authority to enforce whole-

some, though elementary and necessary measures.

The teachers in the public schools have not been trained in the principles of sanitary science, and in the application of public affairs.

To accomplish these manifold and diversified ends would be to amend the law providing for the State Board of Education by the appointment of one physician from each Grand Division of the State—this appointment to be made by our Governor. These physicians should act in conjunction with the other members, and should have full power to act according to the necessary needs for the protection of our school children to examine and look into the sanitary conditions, make provisions for medical inspection, and govern the construction of the buildings, and to instruct the teachers and public by encouraging frequent lectures along this line.

The increase of members of the State Board of Education by adding three competent physicians, as before mentioned, would increase in the effectiveness by concentrating its authority, coupled with absolute power, with a specific duty, would give most satisfactory results.

Upon the preservation of our school children depends the happiness of our people, the success of our nation. A well developed body will enable them in the future to engage in various industries on which we depend for our comfort. To accomplish this purpose, we must have a more compact organization, backed by a new law, in a more concrete form, so as to grasp faithfully and conscientiously the study of these matters from a scientific standpoint—among all the laws of our State none would be more cherished and of practical value. By the lack on concentration and decision the physician has been placed in a humiliating position by being unable to meet promptly the demands of his people—to give them positive information and intelligent advice. Such a change would be in the highest degree an economical one, and with its practical application we would have results

demonstrated that would appeal to the most hardened legislative economist or tax-payer.

To obtain these measures will call for the efforts and assistance of every individual practitioner of medicine, which it deserves. By inviting a more intimate acquaintance with the public school teachers of this State we can meet with a more prompt co-operation and keep each other in touch, to the mutual advantage for the preservation of school children. We cannot know too much of each other, nor have too familiar acquaintance when it comes to this purpose. It must be mutual, agreeable and then profitable.

Let me urge every one of you to do something in regard to bringing about a relation for common advantage. There is no possible danger of the public being over educated; but by this unity we would be enabled to obtain the greatest benefit to man-kind.

DISCUSSION.

Dr. S. S. Crockett, Nashville—It seems very unfortunate, Mr. President, that the discussion of this paper should have immediately followed the president's address. By a strange series of developments in this state, a remarkable awakening has occurred upon this subject. It has been talked of for a few years in an indefinite way, but this movement had its inception not among the doctors, but among the educators, so that a bill was presented by a number of educators who got together and prepared this legislative measure. While it does not go so far as Dr. Dulaney would go, still it is a step in that direction. It does not provide for any doctors on the Board of Education. It does not provide that even a doctor shall be selected by the Board of Health. The matter is left entirely, particularly its administration, in the hands of the Board of Education. It was thought wise not to drag the Board of Health into the administration at all. This matter started with the awakening of our educational systems; educators dropped into line, and now you will hardly see an altruistic organization in the state that has not taken action on this subject. The idea at the bottom of the whole proposition is this: Those people who are interested in seeing a generation of strong men and women occupying Tennessee, after we all pass away, have come to the conclusion that the best place to begin is with the child. The State of Tennessee at this session of the Legislature is proposing to devote one-third of the state revenue to the cause of education. The question naturally arises, why should we offer people educational advantages when they are not able to take them? If an obliga-

tion rests upon the state to supply opportunities by which people of the state may improve their mental faculties, certainly the obligation is equally binding that there should be removed from the children the physical disabilities which prevent them from appropriating the things they try to offer. That obligation is just as important on the state as it is to offer them intellectual developments. The latter seems to have been an exclusive consideration among educators. Why is it that the children represented in this class year after year, who try to go through with their studies, are put back? The next year they try the same thing and are put back. It is important to know the reason why. I asked a particular friend of mine, who has a large educational establishment, and who had something to do with my physical powers in my early career, if he punished his pupils? He replied, "Oh, yes, particularly those who are behind in their class studies." I said to him, "Did you ever test them to see if there is anything wrong with them or not?" He replied, "Yes, I have, and my feelings have been hurt ever since. I punished two boys half a dozen times. What do you suppose was the matter with them?" I suggested "hookworm." He said, "That is what it was. I had my school tested for hookworms, and strange to say, one of the boys who was at the foot of the class one year, whom I punished, is now leading the class. That boy was punished for something he could not help."

There is a small institution here in Nashville which I look after, and in that institution I tested 113 children successively, and of that number found 33 of them with hookworm. One little fellow had a fatty tumor on his back, which I wanted to remove. The teacher said, "He was the last boy to get to the class and the last one to leave, and when he goes out to the playground he never plays." I gave him everything I could, but nothing seemed to do him any good. When I tested him for hookworm I got 120 hookworms after administering one dose of medicine. That was last fall. He has grown two inches from April last year to April this year.

Now, Mr. President, if the state is going to spend its money on people, let us make provision for removing the disabilities from which they are suffering. I am speaking now of the physical disabilities which prevent children from advancing. It may be that the eyes or the ears of these children are at fault which prevent them from advancing in their studies. I am not speaking for the child with infectious disease, but other children who have physical defects. I am not speaking of the child as a disseminator of infectious disease in the community. I am not speaking of the source of infection as a whole from the water supply, etc., but of the child himself. Who is it that is standing in the way in the State of Tennessee and speaking against the medical inspection of school children, saying it is not a good thing for these children? Mr. O. B. Flower. I do not hesitate to mention his name. He is a representative of the

League for Medical Freedom, composed of a certain religious sect, which does not believe that there is any such thing as bellyache or piles. (Laughter.) That is one factor.

Another thing these people are opposed to is vivisection. They reason on the theory that we ought not to discover anything that will cure disease. Again, they are working in the interest of the patent medicine people, who furnish the money, and these fellows do the talking. They cannot deny that. Why do these people object to the inspection of school children, not only in Tennessee, but (as I learned yesterday) in North Dakota. They are trying to prevent the passage of legislation in various states. Why do you suppose they do not want legislation such as we desire to pass? If you stop to consider the question for a moment, you will see it is not to their interest that the people shall know the facts. That is the reason. When that information is disseminated among these people, and to the children who go to school, it goes to the parents and the whole neighborhood. As soon as accurate information is disseminated among the people, their business disappears. This is striking at the roots of their business and they know it, and they will spend half of their fortune to prevent it. I believe that a very large majority of our legislators are honest men. That has been my experience with them, and when you explain a thing to them they will believe you. This man Flower and others are trying to convince our legislators that the doctors want to convert our public schools of the state into anatomical demonstrations. Do you believe for an instant that our legislators believe such a statement. I do not. If every member within the sound of my voice, when he goes up to the capitol tomorrow, will go to his legislator and interview him with reference to the bills that are pending and tell him how important it is for these bills to pass, and that their passage will have something to do with his re-election, I am sure much good can be accomplished.

Dr. George H. Price, Nashville.—The question that is before the association for consideration, namely, legislation as seen in the paper presented by Dr. Dulaney, concerning the inspection of public school children, and the address by the president touching upon general legislation, is perhaps the most important one that will be brought before the Tennessee State Medical Association during this convention. The State of Tennessee today is confronted by a most serious problem, so far as its legislation is concerned. It is a matter of great concern to those who have been immediately interested in the discussion of these subjects and promoting as far as possible the best interests of the citizenship of Tennessee, that we are confronted every day by alien interests which will weigh heavier in the balance in Tennessee's interest. Think of it! Think of an extraneous influence, one born primarily of cupidity, backed by the patent nostrums, opposing the very funda-

mentals of public health and safety and liberty in your state, as here and having the audacity to say to our legislators, "You must give *us* a hearing; *we* can tell *you* what is right, what is just, what is honest. God forbid! Away with such stuff! Such statements should bring every man in the medical profession to his feet to do *his* duty if no one else did.

Four years ago we had a fight in Tennessee, which was the beginning of the conditions which confront us today. Every interest from east to west and from north to south centered upon Tennessee at the time to defeat, if possible, the enactment of a pure food and drug law in this state, and true to the trust, though tried in the balance, yet not found wanting, both Senate and House of the State of Tennessee, put upon the statute books the best and the latest model pure food and drug law, at that time. Some of the interests defeated then are behind the movement which is now seeking to do, what? To throttle at the threshold of your legislature those bills which are calling for your help, and to strangle, if possible, the very opportunity which today presents itself, not only to you, but to every doctor in the State of Tennessee and to every legislator on the hill. It sometimes seems to me as if the people in every state were the continuous subjects of those vultures who are constantly preying upon the public, tearing at the vitals of every state in order to defeat those things which are absolutely essential to the progress of civilization.

It is an easy thing to tell what should be done. It is an easy thing to go before committees occasionally and to discuss these questions. I have tried that. I have discussed a number of them. I have discussed them in company with a number of the gentlemen in this audience tonight. They know the difficulties thrown in the way. They know what we have to deal with, and the time has come, and it is indeed now ripe when the physicians of the State of Tennessee, should once and for all make such an impression upon the legislative body, which is today assembled in your capitol, that from this time on the clarion note of the life-savers of Tennessee shall never again be submerged by the vulture's cry from an alien of the state. (Applause.)

Dr. B. B. Bosworth, Knoxville.—It is with some trepidation I rise to follow the eloquent speaker who has just taken his seat. I do not see how I can have the presumption to say anything that would appeal to you after so striking an appeal as he has made. I have been before the legislature in behalf of the Medical Society of the State of Tennessee, and I know what we are up against. I know how difficult it is to obtain anything like a careful hearing. They treat us politely and kindly, and then forget us. However, the work of the past years has not been without its results, and I feel like working on faithfully and assiduously, and I think by and by we may accomplish what we are after. I am certainly heartily in accord with everything that has been said on this

subject tonight. I believe it touches a tender cord in every heart present, and I believe that we are sure to win if we can inspire these legislators or even the people they represent with one-half the enthusiasm that has been expressed here today.

Dr. K. S. Howlett, Franklin.—The three bills we are mostly interested in are in the hands of the Ways and Means Committee of the Senate, of which the Hon. John I. Cox is chairman. They are the Hygienic Laboratory Bill, the Vital Statistics Bill, and a bill for the Medical Inspection of School Children. It is impossible to get these bills through unless we can get before that committee, and I would like every member of the association to know that if anything can be done or is to be, it must be done tomorrow before that Ways and Means Committee, and if any of you know any of the members of the committee you should approach them with reference to these bills. I want to say this: If we go before this committee and in behalf of our patients demand that this bill be acted upon, and it is recommended for passage, still we have not gotten it through. I have been approached with the suggestion that some of these bills should be modified, and it has been suggested that the amount of appropriation we have asked for be lessened. I wish to state that the legislative committee have studied over this phase of the question very much. We think we have drawn the bills in a way that they will be effective. We feel absolutely sure that these bills cannot be effectively put into operation for any less than we have asked for, and I wish all the members of this association would keep that point in mind. If the bills are modified in any way we will fail to get what we want. It will devolve upon the medical men of the state to put these bills in operation, if passed, and we will have to bear the blame if they are not effective.

Dr. Olin West, Nashville.—I am very glad to have an opportunity to say a few words upon the subject of Medical Inspection of School Children. We are apt to lose sight of the fact that the general remarks that have been made about the value of, and the necessity for medical inspection applies to our own state just as much as to others. As one who has had occasion to visit many of our schools in the last twelve months, I want to tell you with all the emphasis possible that these conditions that have been described here tonight are to be found in our own schools just as in those of other states. Our children are suffering just as are those of Georgia, Kentucky, Pennsylvania and the rest, from the same physical defects that have been brought to your attention this evening.

It was only a few days ago that a prominent business man called me and said: "I am with you doctors in this move that has been made to secure medical inspection in our schools. You can have what money I can give, my time, and anything that I can give to help you." Curious to know the motive for his

apparent interest in the movement, I asked him why he was so interested and he told me this story: "Until I was more than seven years old my parents thought that I was stupid and weakminded. They had almost given me up as a hopeless case because I could not learn to read and could be interested in so few things. About the only thing in the world that did interest me was a little old pony that had been given me, and when I could get on this pony and throw the lines over his neck, leaving him to pick the path, and ride all day I was as happy as a boy could be. But when pictures which interested other children of my age were shown me I would not look at them. An effort was made at home to teach me to read, I was sent to school and the teachers tried to teach me, but I could not learn my letters and was given up. Finally a man with much common sense came along and suggested to my father that there might be some reason for my backwardness discovered by a careful examination at the hands of a physician; that some physical reason independent of any nervous condition might be responsible for my shortcomings. Acting upon this suggestions, I was brought to Nashville and examined by a doctor who went over my lungs and heart and made a very searching examination with no result. He suggested that I be taken to an oculist, and when Doctor Savage had finished his examination of my eyes he announced to my father that it must be impossible for me to see except in a very indistinct sort of way. I was taken home, and well do I remember how, when the glasses that Dr. Savage had prescribed for me came and I put them on, for the first time in my life I was able to see the leaves on the trees under which I had played always; for the first time in my life I was able to distinguish the individual blades of grass at my feet; and, how, when darkness came that night, I saw for the first time the stars in the sky." Do you wonder that that man is working with us to secure medical inspection in our schools?

Another instance that I should like to relate to you in illustration of conditions that are to be found in our schools. While riding along a road with a member of this association I asked him if any school were to be found nearby, and upon being told that one was on our road two miles further on, suggested that we go and look in on the school and see the children. My friend told me that there were five children in the school who were known to have hookworm disease, and I was desirous of ascertaining whether or not they were in attendance upon the school and how they did there. We called out the teacher and asked about these particular five children, being told that they were not there and that they did not come as often as they ought. In reply to our inquiry as to how they did when they were in school, the teacher told us that their normal position in class was the bottom. We asked the teacher if he suspected the reason for this poor standing in

class. His reply was, "No; just dull, I reckon." When I told him the reason, how it was that their blood was impoverished, and that their digestion was impaired, that their mental and physical development was retarded because of their infection with hookworm disease, he said that 'He had noticed that they were 'kind o' puny and unhealthy.'

And I might go on and on, telling you many instances of this sort. Incidentally, I want to remark that we not only do not have to go to other states to find children whose education is impossible because of preventable disease or physical defects that can be removed, nor do we have to go even to East Tennessee or to West Tennessee to find them; they are here in Middle Tennessee, hundreds of them. The boy that Doctor Crockett told you about was a school boy in one of the greatest schools in the world right here in Middle Tennessee. He was whipped, kept in, plead with, given special teaching, and yet he remained last in his class; but when the physical infirmities that retarded him were removed, to the top he went. There are many like him, and their presence in our schools makes a waste of the money that is being expended, and makes a waste of the efforts of teachers that are trying to teach them. How can it be possible to educate a child whose mind cannot develop and whose body cannot grow because of the poison that is being thrown out by the agents of disease and that is being absorbed by the blood that is being relied upon to furnish to him the sustenance that must sustain him? How can such a child be expected to grasp and assimilate the facts that are presented to him, even though his teachers be the most patient and careful, the most up-to-date in their methods? There are many cases of adenoids with their deleterious effects, many cases of partial blindness, many cases of partial deafness, hundreds of cases of hookworm disease among the children of our schools—nearly all of these removable, please remember.

If you will allow, I shall take advantage of this opportunity to say a few words about the hookworm situation. It occasionally happens that we find a doctor, preposterous as it may seem, who does not "believe in" the hookworm proposition. We found a fellow of that kind practicing medicine in the edge of the state, and before we had gotten through with him we proved to him that *he* had hookworm disease, and that every child in his house had it. (Laughter.) I want to tell you that he "believes" in it now, and that he is treating every case that will stand still long enough for him to give them the necessary medicine. (Laughter.)

You cannot expect children to make progress in school if they are oppressed by disease which is interfering with every function. Let us bring these things home to ourselves by a personal application for a moment. When you were tortured with that last attack of "indigestion"—how much real work were you able to do? Think about it for a minute and

then think of these children with hookworm disease who have chronic impairment of digestion, with parasites armed with sharp teeth and cutting jaws hanging onto the lining membranes of their intestinal tracts, making new wounds all the time and destroying the most essential parts of the blood with the poison that they are constantly pouring out for absorption. Suppose that you who have visual deficiencies put aside your glasses the next time you have reading to do or work that requires the constant use of your eyes, and see how much progress you can make with your work. Then think of the children who are retarded by defects of vision that are being censured for not advancing rapidly in class as do those who are not so afflicted. The only difference between you and these children is that you know what is the matter with you, and they don't.

In conclusion, I desire to draw your attention to the fact that medical inspection of school children would enable us to eradicate, to some extent at least, infections and defects that are at present injuring our children in the ways already described but which render them much more liable to other infections which are most responsible for the high mortality that is shown on our vital statistics books. To illustrate: Twenty cases of tuberculosis were examined for hookworm disease in one county, and the infection was demonstrated in seventeen of them. These cases were markedly benefited by treatment for hookworm disease. Doctor Breeding, who is present, will tell you that he has treated tubercular cases for hookworm disease and seen his patients show the most remarkable improvement in their general condition; and he will tell you, as I will, that if our state or counties would provide sanatoria where these cases could receive what is demanded by tuberculosis in the way of diet and hygiene for a cure that they would have a magnificent chance for permanent restoral. I understand that there has been considerable discussion of pellagra at this meeting. Quite a number of cases of pellagra have been found in Tennessee with concurrent hookworm disease, and wonderful benefit has been secured to some of them by the removal of the parasites which helped to reduce the resistance of the patient.

The State Board of Health is your organization, making the best effort they can make with present facilities for the dissemination among the people of the state of the knowledge that is necessary for the prevention of disease. It behooves every doctor to assist them in every way possible. No matter what you have thought about it heretofore, help them now when they are trying hard to do something worth while for the preservation of the public health. As a worker of that organization, I appeal to the membership of this association and to every individual citizen present here tonight for your active support and co-operation. The Board of Health is solidly behind the proposed legislation for the inspection of schools, and I believe that this is the most impor-

tant subject that can be brought to the attention of the Tennessee State Medical Society for their consideration this year, next year, or for years to come until we can secure the legislation which will enable us to remove the physical disabilities which hamper the progress and development of so many of our children. (Applause.)

Dr. William D. Haggard, Nashville.—I did not expect to be called upon to say anything with reference to this subject, and it would be presumptuous on my part to attempt to add anything to what has been said. I only wish to express my feeling of sympathy with this movement, and it does seem to me that if this combination of medical men, representing every county in this state, are not able to influence legitimate legislation for the advancement of the people of the state and for the accomplishment of the ends which have been set forth, we fall short of what we should do. I am in hearty sympathy with the efforts and intention of this body to go in a body before this committee of the legislature and present our claims to them. I only wish it were possible for the members of that committee to have been here and heard these magnificent speeches. I must confess that it has been a revelation to me, and I am very much pleased that Dr. Howlett specified these bills by name and what was intended to be accomplished, because I must confess my own dereliction, and I am satisfied others are perhaps in the same attitude, in failing to do our duty. I am satisfied we have been negligent in this regard, and that in the press of other business we have neglected this very vital question, and now the time has come for action, and I for one want to pledge my support and cooperation in this very meritorious movement. (Applause.)

Dr. Dulaney (closing the discussion).—We are certainly under great obligation to our president, Dr. Witherspoon, for making an address along this line towards this educational movement. It was not the purpose of my paper to reflect on the integrity of our State Board of Health, and I am sure the members of that Board do not take it that way. They are ready to accept any assistance we can offer or

devise any way or means possible for the education of the people along the line of sanitary science and public hygiene. This is certainly a question that ought to receive the attention of every man, woman and child in our state, and if we cannot accomplish this purpose in one way we must in another. The trouble with physicians has been that when there is more work to be done they take the hookworm disease they have tried to do very little. It is a shame that the civic federation of clubs of women have to do all this class of work, inaugurate methods, and take a forward step in this movement. We as physicians should come to their rescue and give them all the assistance we possibly can.

I am sorry none of the speakers brought out any points with reference to the school building. This is a highly important phase of the subject we are discussing. There are very few schools in which the blackboards are properly arranged. They are arranged in all kinds of shapes and are put in all kinds of places, so that the children cannot see to the best advantage. The light is obstructed. Blackboards should be placed in such a position that the reflection of the light will fall directly upon the object. Another thing: We must have our school buildings so constructed that they can be properly ventilated. Most of our school buildings are constructed with an east and west light, which is a bad method. All buildings should be of oblong shape, with the windows on the north and south side of the building, as this light is the most constant one for this purpose.

Another thing to which very little attention is paid is the water closets. The sanitary water closet should be adopted in every school in the state, but unless the people get the support of the physicians of the state they cannot do anything. You will see the most unsanitary closets in various places, and may be three or four hundred yards distant there is a shallow well from which the people get their drinking water. These unsanitary conditions should be corrected

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EDITORIALS

CHRISTIAN SCIENCE AND THE PROPOSED NATIONAL DEPARTMENT OF HEALTH.

The speech of Senator John D. Works, of California, delivered on July 6, 1911, is the most authoritative and illuminating utterance yet made as to the motives and personnel of the opposition to the creation of a national department of health. The time chosen for the delivery of this speech was not without significance. Congress was in extra session and the subject under consideration by the Senate at the moment was Canadian reciprocity. It was hardly to be supposed that, under the exigencies of the occasion, the regular order would be suspended for an extended debate upon an extraneous issue, and this thought was doubtless a factor in determining the time of the attack. It is a cause for congratulation, however, that Senator Owen, of Oklahoma, the author of the bill "To Establish a Department of Health, and for Other Purposes" (Senate Bill No. 1), was on the alert and took occasion to refute many of the arguments and more conspicuous misstatements of the speaker.

Senator Works' speech in printed form is a bulky pamphlet of 48 pages. It is an exceedingly adroit and, to the uninformed, plausible presentation of the true animus of the opponents of the measure. Pervaded by an apparent tone of strict justice and frankness, it is calculated to mislead and deceive the unwary and, if unnoticed, is likely to result in considerable harm to the cause.

In the very beginning the Senator boldly announces that he is a Christian Scientist and proposes to discuss the subject from that peculiar viewpoint. Presumably in order to attract the attention of his col-

leagues and, if possible, obtain a more sympathetic hearing, he then proceeds to air his personal experience with Christian Science healing and to disclose with a candor wholly shameless, the most intimate details of a son's profligacy and a home's disgrace. The average man with normal sensibilities and a becoming sense of family pride could hardly be provoked into a public disclosure of shameful secrets even in the heat of intemperate debate. But when a man, even though an United States Senator, deliberately seeks the occasion to air his dirty linen, one cannot but conclude either that the need was utterly desperate or the man himself an irresponsible fanatic. In either case, testimony of such kind is, and should be, discredited in the utterance. Recognizing neither the dignity of the place nor the proprieties of the occasion, the California Senator at least succeeded in distinguishing himself by, to express it mildly, one of the most pitiful displays of bad taste which has occurred in the public life of the present generation.

It is not our purpose to undertake an arraignment of Christian Science nor to criticise or condemn its adherents. As a form of religious faith, it commands our respectful toleration, though truth compels the admission that its absurdities seem many and glaring. As a method of healing disease, however, we are equally frank to say that it commands only our unqualified contempt. If the fact were not so evident that *healing* instead of *religious faith* is the true explanation of the existence of the cult, there would have been no provocation for these remarks, just as there would have been no occasion for the recent lamentable exhibition on the floor of the United States Senate.

When closely examined, it is apparent that the chief purpose of Senator Works' speech was to afford an opportunity for spreading upon the pages of the much abused Congressional Record an immense amount of "data," confessedly collected for him and for this purpose by the several officials and hirelings of the League for

Medical Freedom. Clearly the "League" needed defense, and equally clearly a fanatical Senator was just the happy medium through which that defense could be given publicity most inexpensively and with at least a veneer of respectability.

This padding, as it appears in the published speech, though printed in much smaller type, consumes more than thirty of the forty-eight pages which comprise the pamphlet. In itself this is rather a sad commentary upon the fertility of the Senator's individual resources; but when the possibilities of free publication and free distribution are considered, it is certainly a convincing demonstration of the astuteness and cunning of those who availed themselves of the proffered Senatorial catspaw.

In this connection it would be of interest to know exactly how many copies of the speech have been printed by the Government, and how many have been sent out, as was the one upon the editor's desk, under the Senator's mailing frank.

Among other interesting revelations contained in the aforementioned "data" is the authoritative statement that 60 to 75 per cent of the membership of the League for Medical Freedom is composed of Christian Scientists. Therein is the worm-eaten kernel in the nut; for it is at once evident that the policy and purposes of the organization are inspired and its activities directed by this preponderating majority. If any confirmation were needed on this point it is supplied by the Chairman of the Committee on Publicity and Education of the League, who, over his own signature, gives a list of its founders and directors. This list contains nine names and Christian Science is specified as the affiliation of each one, when the subject is mentioned at all. These people, it is further stated, "have run the League from its inception."

So, then, it must be accepted as an unquestioned fact that the movement is dominated by this religious sect, a body which, when examined as to its tenets and practices, is found both to stultify and belie the true significance of the two splendid words

forming its high-sounding name. The result is that a cause of inestimable importance to the health and happiness of ninety million people is not threatened merely, but blatantly and brazenly assailed by a coterie of self-satisfied zealots who calmly arrogate to themselves exclusive proprietorship in the several virtues of scientific knowledge and Christian experience.

Nor are the activities of this quasi-religious organization confined to national issues. The character of the opposition which developed at the last session of the Tennessee Legislature to the bill providing for the medical inspection of school children, and the methods employed, are fresh in the memory of all. The desks of the members of the State Senate and House of Representatives were repeatedly supplied with pamphlets denouncing the measure and containing the most calumnious and libellous misrepresentations; telegrams and letters were poured in from various points, both within and without the State, signed by Christian Scientists; Christian Science attorneys confessedly representing Christian Science clients were on hand for days awaiting an opportunity to present their specious arguments before the legislative committees; and Christian Science lobbyists were constantly upon the scene seeking in every way known to the political trickster to divert attention from the real issue, covert insinuations and unscrupulous imputations as to the motives of those who favored the measure forming their chief weapons of attack. At one time while the bill was pending the secretary of the League for Medical Freedom put in his appearance from Toledo, thus, months prior to Senator Works' naive disclosures, clearly establishing the unholy alliance existing between the League and Christian Science. In a number of other States, also, opposition from the same source and employing the same tactics was encountered by this beneficent measure during the last sessions of the several legislatures.

In seeking for an explanation of the im-

placable antagonism of Christian Science to the creation of a national department of health, not to mention progressive health legislation in the various States, we are forced to one of two conclusions: either that the self-assumed name of the cult is an absurd misnomer chosen to deceive and mislead, or that, blinded by fanatical zeal, its devotees have allowed themselves to become the pitiful dupes and tools of other and more sinister influences.

There is, doubtless, truth in both propositions. It is becoming daily more apparent to those of discernment that the practice of healing and the money to be derived from this source is the leading purpose of the organization,—*not* the practice and dissemination of the truths of Christianity. Zeal may be inspired by other than religious causes and fanaticism be more assumed than real. If, on the other hand, the followers of this un-Christian, anti-scientific fad are in reality being used as catspaws by powerful mercenary interests, as seems altogether probable, the danger to the cause at stake is not to be lightly estimated. A combination of unlimited money and unreasoning fanaticism, when shrewdly manipulated, is one capable of embarrassing the worthiest cause.

Just a word as to the proper remedy. Publicity,—wide-spread and aggressive dissemination of correct information as to what the movement is and the inestimable benefits certain to result from its successful establishment is the first indication. For this purpose nothing would be so instructive and useful as the publication of the Owen bill itself, in condensed form, if necessary, in the newspapers and lay magazines and periodicals. A true knowledge of the provisions and purposes of the measure should be the only emphasis of its merits required by a public already awakened as to the great importance of the issues involved.

In the writer's opinion the situation is sufficiently serious to call for a wisely-directed campaign of popular instruction upon the subject.

A. B. C

"FEE SPLITTING."

For sometime we have been hearing occasional rumblings in the distance with now and then a distinct outbreak in localities relative to the custom, which is stated to be growing in our profession, of fee splitting. We have occasionally heard that certain surgeons of renown and international reputation were accustomed to divide fees with internists for bringing patients to them. All of which, we must acknowledge, has been received with a degree of scepticism, for we do not believe that the better element of our profession is guilty of such gross and unethical misconduct. We are at least inclined to condone such offense if it should exist among competent and capable surgeons or general practitioners, but we believe that it is time for us to speak out in protest when the profession is openly insulted by an offer of \$20 per patient from fake and unethical institutions claiming to be able to cure the opium and drug habit in ten days. The following letter is self explanatory:

Dear Doctor: We are sending you an invitation to visit Cumberland Sanitarium and the enclosed card entitles you to three days complimentary entertainment in order that you may investigate our methods until you are convinced that you have discovered a place where your patients who are addicted to morphine and liquor can be cured in a humane and scientific manner.

If after investigating our methods you are convinced that our treatment is all we claim, we are going to make you a proposition, realizing that reward sweetens labor, that will appeal to you financially as well as professionally. There are in every community, as statistics show, from six to thirty patients who are addicted to opium, and sooner or later these patients are going to be treated at some sanitarium, that is, those who are able, and those who are not are sure to try some home treatment or method of treatment by mail. So, if you haven't the time, and are not prepared to look after this class of patients, we are going to give you the opportunity to increase your bank account several hundred dollars, and you may thus be the means of rescuing unfortunate victims from the clutches of the drug without violating medical ethics.

For every patient you send us, directly or indirectly, we are going to allow you \$20 on all who pay our minimum fee for treatment here at the sanitarium. We will also allow you \$3.00 on

those who order our Home Treatment, which you can assist the patient in taking. If you will fill out the enclosed blank, giving us the names of those who are addicted to morphine or opium, we will be pleased to forward our literature without the fact being known that you gave us any of the patients' names. You may speak with the patient if you like, but in no way will your name be mentioned. Remember, Doctor, that the cure is effected here within ten days, the patient suffering none of the terrible ordeals of process. Those who visit the sanitarium can deposit the fee in any bank in our city until the patient has received a satisfactory cure. We will be glad to give you any information you may desire. Write us and oblige,

Yours very truly,
CUMBERLAND SANITARIUM.
F. J. SANDERS, Superintendent.

This is a direct insult to the integrity of the profession and is but an indication of the extremes to which these conscienceless quacks may be expected to resort. They purpose to give you an opportunity to increase your bank account by several hundred dollars and offer you a means of rescuing unfortunate victims from the clutches of the drug habit without violating medical ethics. We would like to know what Mr. Sanders knows of medical ethics. We dare say he hasn't the slightest conception of how disreputable a proposition he has made to the profession. We sincerely hope that no member of the State Society would be guilty of handing into their clutches one who is so unfortunate as to be a victim of the alcohol or drug habit.

HOOKWORM DISPENSARIES.

The State Board of Health announces the appropriation of money by the county courts of three counties in the State for the establishment of dispensaries for the free treatment of Hookworm disease. This plan for securing the treatment of this disease has proven remarkably successful in Alabama, Mississippi, and North Carolina. From three to five dispensary points will be established in each of the counties making appropriations and the State Board of Health will have a representative to conduct the dispensaries. If the number apply-

ing for examination and treatment warrants it, a microscopist will be supplied by the Board. It is hoped that this plan will avail in securing treatment at proper intervals of many cases of hookworm disease and go far toward the eradication of the disease from the State. The active co-operation of all physicians is asked for by our State Board of Health to the end that these dispensaries may be successful.

PELLAGRA COMMISSION.

The Commission on Pellagra appointed at the last annual meeting of the State Board of Health made its report to that body at a meeting held in Nashville October 3. The report is worth reading and gives much food for thought. This Commission has given most careful and earnest effort to their work and their report opens the way for further investigation which may result in definite information being secured concerning the nature of pellagra. The report is based upon the findings in 316 cases personally seen by the members of the Commission, Drs. Krauss, Rhea, and Brooks. A far larger number of cases have been reported, but only 316 cases were actually visited by the members of the Commission.

HEALTH SPECIAL.

The Agriculture-Health-Education Special train will begin the tour of East Tennessee over the lines of the Southern Railway on October 16. The credit for this movement must be given to Captain T. F. Peck, Commissioner of Agriculture, and it is by his invitation that the Departments of Health and Education will have exhibits and speakers with the train. The Board of Health will have as good an exhibit as the limited time will allow them to secure and will take advantage of the opportunity to spread the gospel of sanitation and disease prevention as widely as may be done. A microscopist will be on board and will take pleasure in making examination of specimens that may be submitted by the physicians in the towns where the train stops.

Literature on preventable disease will be on hand for free distribution. It is hoped that the doctors will visit the health car and help the good work.

DEATHS

Doctor John C. Drennan, of Woodbury, Tenn., committed suicide September 14, at his home by shooting himself with a shotgun. Funeral services were conducted at the family residence on the same afternoon. The remains were laid to rest at the Wiley Cemetery by the officers and members of the Modern Woodmen of America. The only cause for this awful tragedy is despondency over failing health.

Doctor J. H. S. Taylor, of McMinnville, died September 16 after a long illness at Yager, Tenn. He had been ill from a complication of diseases and finally succumbed to typhoid fever. He was a farmer and physician who moved to Warren County from White County four years ago. He was a very successful physician and had a large practice. He leaves a wife and three children.

Hassell Paschall, the fourteen year old son of Doctor Alf Paschal of Crossland, died September twenty-fifth of typhoid fever.

Doctor William R. Ramer, aged 73 years, died at his home in Chewalla September 20, after a lingering illness. He had spent his life in and around Chewalla, having practiced medicine nearly fifty years. He was an ex-Confederate soldier, serving under Forrest. He was a member of the Methodist Church and a Mason. The remains were buried at the old Tate burying grounds with Masonic honors. Three brothers survive him: Doctor Felix Ramer, of Kenton; Squire J. S. and Thomas J. Ramer, of Ramer, Tenn.

Dr. J. B. Florence, a prominent physician six miles northwest of Camden, Tenn.,

died suddenly September 30 of heart failure. He was 73 years of age and left a widow and several children. The remains were interred in the Rushing's Creek Cemetery.

NEWS NOTES AND COMMENT

Doctor T. E. Abernathy, President of the State Board of Health for the past eight years, tendered his resignation to Governor Hooper on October 4. Doctor Abernathy received the appointment through Governor Frazier and has rendered valuable service to the State at large in the competent and efficient conduct of his office. He has been a tireless worker in the field of preventive medicine and has done much to elevate the State Board of Health to the high position to which its work entitles it.

We regret that the State Board has lost such a valuable worker, and wish Doctor Abernathy much success in the ranks as a private.

Doctor J. R. Rathmell, of Chattanooga, has been appointed by Governor Hooper, a member of the State Board of Health to fill the vacancy caused by the resignation of Doctor T. E. Abernathy. Doctor Rathmell was highly recommended to the Governor by the Chattanooga profession and was especially urged for the place by Doctor Abernathy.

Announcement was made at a recent meeting of the Tuberculosis Hospital Commission that Doctor M. E. Link will take charge of the hospital October 9. There are already ten patients at the institution, and these are occupying tents until the building can be completed. Its capacity will be forty patients and as many more can be accommodated in tents.

The East Tennessee Medical Association met at Morristown Thursday and Friday, October 12 and 13. Secretary Copenhagen found that it was impossible for him to serve, and Doctor O. W. Hill, of Knoxville,

was appointed by the President to serve as Secretary in his stead. The question of combining the East and Lower East Tennessee Societies came up for consideration. A full report will be given in our next issue.

Doctor Lucius P. Brown, State Pure Food and Drug Commissioner and Chief Chemist of Tennessee, who has been in New York City for several days attending the National Conservation Congress, will return to Nashville Saturday, October 7. Doctor Brown addressed the Congress, while in New York, on questions confronting men engaged in the work of looking into food and drug conditions.

Doctor and Mrs. McPheeters Glasgow and little daughter, Mary Bell, reached home Sunday from a week's stay at French Lick Springs, where they went from Highland Park, Ill., where Mrs. Glasgow spent the summer, and Doctor Glasgow had been for a month's stay.

Doctor and Mrs. E. G. Wood, whose return to Canada to live after a residence of a number of years in Nashville, is regretted by many friends here, are located in Toronto at 430 Markham Street. They returned to America a few weeks ago from a year spent in Europe.

Doctor Shields Abernathy, a graduate of Vanderbilt University, and Secretary of Giles County Medical Society, who has recently completed a post-graduate course at Bellevue Hospital, will locate in Memphis.

The Medical Department of Vanderbilt University opened Thursday, September twenty-first, with three hundred and twenty-five matriculates. This is the largest enrollment on the opening day in the history of this department.

The exercises were opened with prayer by Doctor Jno. H. Moore, Local Secretary of Foreign Missionary Board of the Methodist Church, who spoke feelingly to the

class and admonished them to higher ideals than mere monastary aspirations. The address of Doctor Moore was well received. Chancellor Kirkland, who presided, introduced the Dean, Doctor Dudley, who announced the arrangements which had been made for Greater Vanderbilt. The buildings in South Campus, not being completed the classes are for the present occupying the old medical building on Fifth Avenue, South.

Dr. J. M. Selden, of Chattanooga, has moved his offices from No. 5 E. 8th Street to the new Hamilton National Bank Building.

Dr. W. H. Cheney, of Chattanooga, is in Chicago taking a post-graduate course.

Dr. P. D. Sims has resigned as City Physician of Chattanooga, a position he has held for the past seven years, to accept the office of Contagious Disease Physician.

Dr. John B. Steele, of Chattanooga, was on September 10, appointed City Physician by Commissioner of Health H. Clay Evans. He has most acceptably filled the position of Assistant City Physician for the past six years.

The opening of the sixty-first session of the University of Tennessee College of Medicine, Memphis, Tenn., was more successful than any other of recent years, the advance enrollment representing 18 states and 2 foreign countries. The following were features of the opening exercises: Address of Dr. Brown Ayres, President of the University, on "The Significance of the Consolidation of the University of Nashville Medical Department and the University of Tennessee Medical Department with the College of Physicians and Surgeons and the advantages to be realized by the location in Memphis of the Universities' three professional schools of Medicine, Dentistry and Pharmacy." Dr. Potts' address on the relationship of the Baptist Memorial Hospi-

tal to the College of Medicine; the Secretary of the Business Men's Club of Memphis welcomed the colleges in the name of the fifteen hundred members of that organization.

Dr. Dan'l N. Williams, of the 1911 class of the University of Nashville and Tennessee, has located in Chattanooga and will be associated with Dr. J. S. Dye.

Dr. E. Dunbar Newell, of Chattanooga, is attending the clinics at Chicago and Rochester.

At the moment the medical profession is interested in Spleen substance, which according to reports has been used with success in tuberculosis as well as malaria and has been recommended in anemia.

Desiccated Spleen is supplied by Armour & Company, and comes as a light gray powder which is practically odorless and with little taste.

Physicians interested should write Armour & Company, Chicago.

MARRIAGES.

The marriage of Dr. Edward Denton, of Ridgedale, to Miss Selma Pause, of Atlanta, occurred on September 20.

Dr. Willard Steele, of Chattanooga, will be married on October 18 to Miss Kate Adelle Hinds, of Lebanon, Tenn.

Married—Dr. Chas. Gertrude Graham to Mr. Hugh W. Timothy, both of Chattanooga.

SOCIETY PROCEEDINGS

HAMILTON COUNTY.

Weekly meeting of the Chattanooga Academy of Medicine and Hamilton County Medical Society held September 8, 1911, at 8 p. m.

President James H. Atlee presided. Roll of members called, twenty-three being present. Four visiting physicians were present.

Minutes of the last regular meeting were read and approved. Mr. Soleshin of the Associated Charities made a talk and defined in detail his contemplated plan of establishing some three or more visiting nurses in this city. On motion, the Society endorsed the movement. Dr. B. S. Wert stated that Secretary Bunn, of the Manufacturers' Association had informed him that the Society was welcome to hold our meetings in their hall free of all cost except lights. Motion prevailed that Drs. Wert, Larimore and W. G. Bogart confer with Mr. Bunn and report to the Society. Cases were reported by Drs. T. E. Abernathy, C. A. Cobleigh, J. M. Selden, J. H. Atlee and H. L. Fancher. Two interesting essays were read. First, Dr. Fred B. Stapp's essay on "Whooping-Cough," which was read by Dr. J. M. Selden. Second, Dr. C. A. Cobleigh on "Diphtheria." Discussion opened by Dr. Raymond Wallace and continued by Drs. F. T. Smith, J. M. Selden, T. E. Abernathy, G. V. Williams and B. H. Brown.

The Society adjourned.

H. P. LARIMORE, *Secretary.*

Weekly meeting of the Chattanooga Academy of Medicine and Hamilton County Medical Society held September 15, 1911, at 8 p. m.

President James H. Atlee presided. Roll of members called, twenty-four being present. Ten visiting physicians and dentists were present. Minutes of the last regular meeting were read and approved. Dr. B. S. Wert, for the new hall committee, recommended that within two or three weeks, on completion of the Manufacturers' Association Hall, that the Society then hold a meeting there and at that time a vote be taken to decide the advisability of moving. On motion, the recommendation of the committee was sanctioned. The Secretary notified the Society that the books of the late Dr. G. A. Baxter had been proffered to the Society, same to be added to the Society's library. On motion, the books were accepted. The Secretary notified the Society that the East Tennessee Medical Society would meet at

Morristown October 12 and 13. Two interesting papers were read. First, Dentist O. J. O'Neal's paper on "Extraction of Teeth" being read by Dentist R. S. Henry. Second, Dentist J. L. Austin on "Care of Children's Teeth." Discussion opened by Dentist Wills, continued by Dentists Day, Varnell and Henry and Drs. J. W. Macquillan, H. L. Fancher, E. R. Anderson, B. Sullivan and F. B. Stapp and closed by Dentist Austin.

The Society adjourned.

H. P. LARIMORE, *Secretary*.

Weekly meeting of the Chattanooga Academy of Medicine and Hamilton County Medical Society held September 22, 1911, at 8 p. m.

Vice-President F. T. Smith presided until the arrival of President James H. Atlee. Roll of members called, thirty-nine being present. Two visiting physicians were present. Minutes of the last regular meeting were read and approved. Cases were reported by Drs. W. M. Bogart and W. H. Cheney. Dr. J. W. Macquillan delivered a most interesting address entitled "The Significance of Nervous Symptoms as the Result of Accidents." Discussion opened by Dr. Raymond Wallace, continued by Drs. H. Berlin and J. J. Gee and closed by Dr. Macquillan.

The Society adjourned.

H. P. LARIMORE, *Secretary*.

Weekly meeting of the Chattanooga Academy of Medicine and Hamilton County Medical Society held September 29, 1911, at 8 p. m.

Dr. J. W. Macquillan presided until the arrival of President James H. Atlee. Roll of members called, twenty-six being present. Two visiting physicians were present. Minutes of the last regular meeting were read and approved. Cases were reported by Drs. G. M. Ellis, S. I. Yarnell, H. Berlin, W. H. Cheney, J. B. Haskins, J. W. Macquillan, E. B. Anderson, C. A. Cobleigh and E. T. Newell. Dr. E. T. Newell read a most interesting paper entitled "Severe Compli-

cations Following Abdominal Sections; Cause and Treatment." Discussion opened by Dr. W. G. Bogart, continued by Drs. E. B. Anderson, J. W. Macquillan, C. A. Cobleigh, Raymond Wallace, H. Berlin, J. B. Haskins and B. Sullivan and closed by Dr. Newell.

The Society adjourned.

H. P. LARIMORE, *Secretary*.

Weekly meeting of the Chattanooga Academy of Medicine and Hamilton County Medical Society held October 6, 1911, at 8 p. m.

President James H. Atlee presided. Roll of members called, twenty-four being present. One visitor was present. Minutes of the last regular meeting were read and approved. A case was reported by Dr. E. E. Reisman. Dr. Jos. W. Johnson read a most interesting paper entitled "The Problem of Longevity as Related to Life Insurance." Discussion opened by Dr. E. B. Wise, continued by Drs. J. W. Macquillan, E. B. Anderson, Raymond Wallace, F. T. Smith, L. B. McWhorter, J. B. Haskins, B. Sullivan, B. S. Wert, J. S. B. Woolford and F. B. Stapp and closed by Dr. Johnson.

The Society adjourned.

H. P. LARIMORE, *Secretary*.

GREENE COUNTY.

The Greene County Medical Society met in regular session in the office of Doctors Fox and Taylor at 10 a. m. August seventh, Doctor J. B. Bell, President, presiding. Minutes of the last meeting were read and approved. Doctor C. P. Fox then presented an illustrated lecture on "The Diagnosis of Appendicitis," which was most interesting and instructive. Talks were made by Doctors Huffaker and Blanton, showing the importance of an early operation in appendicitis. Doctor M. G. Price reported a case which the Society thought to be pellagra.

The following application for membership was made: Doctor T. B. Hughes, Jeraldstown, Greene County, date of graduation 1902, licensed 1902.

The Society then adjourned to meet in its

next regular session the first Monday in November.

M. A. BLANTON, M. M., Secretary.

PROGRAM MISSISSIPPI VALLEY MEDICAL ASSOCIATION.

NASHVILLE, TENN., OCT. 17-19.

Following is the program as arranged for the meeting of the Mississippi Valley Medical Association:

1. Pellagra: Its Epidemology. By Assistant Surgeon R. M. Grimm. (By invitation.) Washington, D. C.

2. The Prevention and Eradication of Bubonic Plague. By Passed Assistant Surgeon W. C. Rucker. (By invitation.) Washington, D. C.

3. Typhoid Vaccination and Its Practical Application as it Concerns the General Practitioner. By W. T. Harpole, Chicago.

4. The Medical Aspect of Chronic Typhoid Infection (Typhoid Baccillus Carriers). By Willard J. Stone, Toledo, Ohio.

5. Diseases Produced by the Colon Bacillus: Diagnosis and Treatment. By Fenton B. Turck, Chicago.

THERAPEUTIC SYMPOSIUM.

1. General Management of Pulmonary Tuberculosis. By Thomas D. Coleman, Augusta, Ga. Discussion opened by William Porter, St. Louis, Mo.

2. Treatment of Hemorrhage in Pulmonary Tuberculosis. By C. L. Minor, Asheville, N. C. Discussion opened by Silvio von Ruck, Asheville, N. C.

3. Diet in and General Management of Typhoid Fever. By George Dock, St. Louis, Mo. Discussion opened by Clarence H. Vaught, Richmond, Ky.

4. Theatment of Hemorrhage in Typhoid Fever. By W. F. Boggess, Louisville, Ky. Discussion opened by J. A. Witherspoon, Nashville, Tenn.

5. Dietetic and Hygienic Management of Hyperarterial Tension. By A. R. Elliott, Chicago, Ill. Discussion opened by A. C. Croftan, Chicago, Ill.

6. Treatment of Cerebral Apoplexy. By E. M. Hummel, New Orleans, La. Discus-

sion opened by Hugh T. Patrick, Chicago, Ill.

7. Collapse in Pneumonia. By Frank Jones, Memphis, Tenn. Discussion opened by Robert B. Preble, Chicago, Ill.

8. Concerning Digitalis. By Frederick Tice, Chicago, Ill. Discussion opened by G. W. McCasky, Fort Wayne, Ind.

GENITO-URINARY SYMPOSIUM.

1. Diagnostic Aids in Surgery of the Renal Pelvis, and Ureter with Special reference to Pyelography. By W. F. Braasch, Rochester. Discussion opened by John T. Geraghty, Baltimore, Md.

2. Diagnosis of Prostatia Obstruction. By Bransford Lewis, St. Louis, Mo. Discussion opened by E. G. Mark, Kansas City, Mo.

3. Cancer of the Prostate. By Robert C. Bryan, Richmond, Va. Discussion opened by L. W. Bremerman, Chicago, Ill.

4. The Influence of Stricture of the Urethra on the Development of Hypertrophic Changes in the Prostate. By Hugh Cabot, Boston. Discussion by Louis Schmidt, Chicago, Ill.

5. Operative Treatment of Gonorrheal Epididymitis. By Francis Hagner, Washington, D. C. Discussion opened by J. W. Handley, Nashville, Tenn.

6. Caliculus Anuria. By Dean Loree, Ann Arbor, Mich. Discussion opened by C. M. Harpster, Toledo, Ohio.

7. Post Operative Anuria. By E. O. Smith, Cincinnati, O. Discussion by Wm. N. Wishard, Indianapolis, Ind.

8. Strictures of the Male Urethra at Bulb. By G. S. Peterkin, Seattle, Wash. Discussion opened by Carl Wheeler, Lexington, Ky.

SPECIAL SYMPOSIUM ON CHOLECYTITIS.

1. Pathology and Complications. By H. M. Richter, Chicago, Ill.

2. Frequency and Etiology. By Charles N. Smith, Toledo, O.

3. Symptomatology and Diagnosis. By Bayard Holmes, Chicago, Ill.

4. Medical Treatment. By Wm. Engel-

bach, St. Louis, Mo. Discussion by Thomas H. Stucky, Louisville, Ky.

5. Surgical Treatment. By Louis Frank, Louisville, Ky. Discussion by W. D. Haggard, Nashville, Tenn.

SPECIAL COMBINED SYMPOSIUM ON VISCEROPTOSIS.

1. Special Consideration. Etiology, Symptomatology and Treatment. By Alex. C. Weiner, Chicago, Ill.

2. Nephroptosis. Dropped Kidney. Its Effect Upon the Nervous System with Special Reference to Insanity. By C. W. Suckling, Birmingham, England.

3. A Discussion on the Pregnancy Factor and Its Bearing on Nephroptosis. By Cary Culbertson, Chicago, Ill.

4. Medical and Mechanical Treatment. By A. Ernest Gallant, New York, N. Y.

5. Indication for Surgical Procedure and Method of Applying. By Earl Harlan, Cincinnati, O.

6. The Surgical Treatment of Nephroptosis. 350 Patients and 500 Nephropexies. By Wm. Billington, Birmingham, England.

7. Principles Underlying the Treatment of Visceroptosis. By Wm. MacI. Thompson, Chicago, Ill.

Discussion by M. L. Harris, Chicago, Ill.; W. B. Coffey, Portland, Ore.; A. H. Cordier, Kansas City, Mo.

GENERAL TOPICS—MEDICAL.

1. The Importance of Chronic Kidney Inflammations. By D. M. Hall, Memphis, Tenn. Discussion opened by Wm. Witt, Nashville, Tenn.

2. Eclampsia, with a Study of the Kidney Efficiency by the Aid of Phenolsulphothaline. By Harold A. Miller, Pittsburg, Pa.

3. The Freudian Doctrines. By Frank Parsons Norbury, Hospital, Ill. Discussion opened by Curran Pope, Louisville, Ky.

4. Cerebritis With Effusion. By Albert E. Sterne, Indianapolis, Ind.

5. The Value and Importance of Correct Medical Expert Testimony Before Courts and Juries. By C. H. Hughes, St. Louis, Mo.

6. Cases of Protracted Intervals Between

the Birth of Twins. By W. W. Vinnedge, Lafayette, Ind.

7. The Role and Methods of Psychotherapy in the Care of Psychasthenia which Tends Towards Inebriety; The Functions of the General Practitioner. By Tom Williams, Washington, D. C.

8. Some Popular Fallacies on the Treatment of the Gastro-Intestinal Diseases of Infancy. By I. A. Abt, Chicago, Ill. Discussion opened by J. Ross Snyder, Birmingham, Ala.

SURGICAL.

1. Ovarian and Uterine Tumors Complicating Pregnancy. By Channing W. Barrett, Chicago. Discussion opened by Frank Boyd, Paducah, Ky and L. S. McMurtry, Louisville, Ky.

2. A Further Contribution on the Subject of Fibroid Tumors of the Uterus. By F. D. Smythe, Memphis, Tenn. Discussion opened by John R. Wathen, Louisville.

3. Bismuth Paste in Sinuses and Intestinal Tract, as Shown by the X-ray. By W. D. Hanes and E. T. Bruce, Louisville, Ky. Discussion opened by A. B. Cooke, Nashville.

4. Comparative Teaching Value of Photographs to Drawings in Technique of Hernia. By Chas. T. Souther, Cincinnati, O.

5. The Mechanism and the Clinical Interpretation of Choked Disc. By Geo. F. Suker, Chicago, Ill.

6. Paper by Allen B. Kanavel, Chicago, Ill.

7. The Importance of Proper Feeding after Celiotomy. By J. J. Carstens, Detroit, Mich. Discussion opened by Robert C. McChord, Lebanon, Ky.

8. The Treatment of General Peritonitis, Based upon Personal Experience. By Daniel N. Eisendrath, Chicago, Ill. Discussion opened by B. F. Zimmerman, Louisville, Ky.

9. Gun Shot of the Spinal Cord with Skyagraph. By Wm. Britt Burns, Memphis, Tenn.

PROGRAMME.

Second Annual Conference on Hookworm Disease,
Nashville, Tenn., September 14, 15, 16, 1911.

THURSDAY, SEPTEMBER 14.

Subject—"The Dispensary."

10:00 A.M.—(a) Dispensary Work in Mississippi, Dr.
W. S. Leathers. (20 min.)

(b) Dispensary Work in Alabama, Dr.
W. W. Dinsmore. (30 min.)

(c) Dispensary Work in North Carolina.
Dr. Jno. A. Ferrell. (20 min.)

11:30 A.M.—General discussion on the dispensary, in-
cluding organization, procedure, staff,
outside help, laboratory help, equip-
ment, advertising, records.

1:00 P.M.—Adjournment for lunch.

3:00 P.M.—Afternoon Session, Reports and Records.
Dr. Jno. A. Ferrell.

Daily report blank, filing systems, lab-
oratory records, follow-up systems, re-
port of cases treated by physicians.

4:30 P.M.—The Educational Campaign. Dr. Sidney
D. Porter. (20 min.)

Discussion by Dr. J. LaB. Ward. (20
min.)

General discussion.

FRIDAY, SEPTEMBER 15.

11:30 A.M.—Amoebiasis and Hookworm Disease. Dr.
C. W. Stiles.

Medical Aspects of Uncinariasis. Dr.
Rowan, of Mississippi.

3:00 P.M.—The Sanitary Privy. Dr. A. W. Freeman.

The scoring system, the L. S. R. privy,
tub privy, disinfectants. The cam-
paign for the sanitary privy.

4:30 P.M.—General Discussion on Estimating the De-
gree of Infection and the Sanitary
Survey.

SATURDAY, SEPTEMBER 16.

10:00 A.M.—Methods of Treatment. Dr. Olin West.
(20 min.)

Discussion. Dr. J. G. Fort. (20 min.)
Thymol, dosage, administration, purga-
tives, untoward effects, other anthel-
minitics.

11:30 A.M.—Results of Treatment. Dr. A. C. Fisher,
Virginia.

1:00 P.M.—Adjournment for lunch.

3:00 P.M.—Field experiences by the district inspect-
ors. One man from each state to be
chosen by the director, each to be
allowed fifteen minutes.

NOTE.—At dinner each evening there will be an in-
formal discussion of all problems connected with the
work.

W. S. LEATHERS, Mississippi, *Chairman*.
A. W. FREEMAN, Virginia, *Secretary*.

BOOKS RECEIVED.

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OPERATIVE TREATMENT OF ACUTE GONORRHEAL EPIDIDYMITIS.*

BY DR. PERRY BROMBERG, NASHVILLE, TENN.,
Professor of Genito-Urinary Surgery, Medical Department of Vanderbilt University.

Mr. President and Gentlemen of the Chattanooga Academy of Medicine:

It is with considerable hesitancy that I appear before a learned body of scientific gentlemen to discuss so old and uninteresting a subject as the one which has been selected. My reasons for doing so may be said to be due to several facts.

First, I am especially interested in this department of surgery, and any advance would naturally strike me with more force than it would strike the general practitioner.

Second, from my association with doctors in general work, I am constrained to believe that the pathology of epididymitis is not generally understood. In fact, it is quite a common occurrence to find doctors who call practically all inflammations within the scrotum an inflammation of the testicle.

Third, my utter failure to observe the slightest good results from medicinal treatment, caused me to adopt the surgical plan, and my enthusiasm over results I have obtained is in turn my principal reason for selecting what to many of you must be a

very uninteresting subject. Those of you who are not interested in this class of work may find some consolation in the assurance that my remarks will be brief, and I hope practical.

Medical text-books have for more than fifty years given epididymitis a special classification, and have emphatically and with much positiveness stated that it is distinct from inflammation of the testicle, both in symptomatology and pathology; yet, I can state without fear of contradiction that many of the profession still regard all inflammations within the scrotum to be inflammations of the testicle, while in truth and fact gonorrheal inflammation of the testicle is very rare indeed.

Dr. Francis R. Hagner, of Washington, whose article in the *Annals of Surgery*, December, 1908, first attracted my attention to the operative treatment of this condition, states in a more recent article that in search of an acute gonorrheal testicle he has failed to find one.

Monod and Terrillon, who have made exhaustive research into this condition, state emphatically that in gonorrheal disease of the testicle the epididymis only is involved.

White and Martin, in their eighth edition, strongly emphasize that in urethral infections the testicle escapes and the epididymis suffers, and practically every writer upon genito-urinary surgery lays stress upon this fundamental fact, it is therefore very amusing that works upon general surgery have as yet failed to comprehend the

* Read before Chattanooga Academy of Medicine

location of the pathology, and seem to be able to cure their patients with the "usual treatment." I would call your attention to the following:

DaCosta's text-book of surgery, fifth edition, 1909: "Acute epididymitis is characterized by swelling about the testicle, pain in the groin, and tenderness over the posterior part of the testicle. The pain becomes acute, swelling rapidly increases and the constitution sympathizes. The swelling is partly due to engorgement of the epididymis and partly due to fluid in the tunica vaginalis.

"Treatment by aseptic puncture with a tenotome, if fluctuation is marked, will relieve tension and pain. Leeching over the external abdominal ring, the use of an ice bag, elevation, application of guiacol and the administration of laxatives and opium constitute the usual treatment in the acute stage."

Rose and Carless, in their seventh edition, say that it is "ushered in by pain in the inguinal region and perhaps in the epigastrium, along the course of the vas deferens, which soon extends to the scrotum. The testicle becomes enlarged, but its shape is that of an elongated oval, somewhat flattened laterally. The epididymis is readily felt as a crescentic swelling partially overlapping the gland in all directions and in its concavity the rounded outline of the anterior wall of the testis can usually be distinguished, or the tunica vaginalis distended with fluid. The scrotum is red, edematous and adherent to the testicle, whilst the cord is infiltrated, enlarged and tender. The same constitutional symptoms are met with as in orchitis. Suppuration is perhaps more common than after the latter affection, but it is a rare complication. The treatment of both of these conditions (orchitis and epididymitis) consists in keeping the patient in bed with the scrotum supported on a small pillow. The part is assiduously fomented, except when the case is seen very early, when an ice bag or Leiter's coil being then employed. Leeching should not be utilized, as the triangular leech-bites are very

liable to become irritated and septic and never heal well in the scrotum. If local abstraction of blood appears desirable, one or more of the scrotal veins may be opened; pain, if very severe, may be mitigated by a hot sitz bath, or by morphine suppositories. As regards general treatment, the patient after a preliminary dose of calomel, is kept on a fluid, unstimulating diet, whilst alkaline purgatives are administered, with the addition of tincture of henbane or opium as a sedative; if the pulse is hard and the temperature high, wine of antimony in ten minim doses is also beneficial. When the acute stage is passed, the organ usually remains enlarged, and for a time, somewhat tender; it is then best treated by strapping with lead plaster, which should be continued until all signs of thickening and induration have disappeared."

It would be interesting to quote from the various works I have consulted in the preparation of this paper, and note the divergence of views expressed both as to the pathology and the treatment, but it is needless to say, that I do not regard as of much worth, expressions as to location of pathology by men who I dare say have never opened the scrotum for acute gonorrheal disease nor made any especial effort to determine the cause of these changes. I cannot deny that leeches applied over the external abdominal ring cured the patients of Professor DaCosta, but I am at least at liberty to record my impressions as to the value of leeches, guiacol, et al., for I formerly resorted to these methods and gave them up as worthless many years ago. Surely no one here believes that a leech can possibly withdraw blood as fast as nature pumps it back again, or that guiacol or any other local application will pass through the thickness of the scrotum, then jump through space, or pass through an acute hydrocele, and attack beneficially an inflamed system of tubules which are packed in a protective serum. To accept such dogmatic statements requires more faith than the old-time religion, and I must acknowledge that I am sceptical.

Monod, Terrillion, Casper, von Leyden, Malassez, Hagner, Bellfield and a host of

others who have studied and written upon this subject as true scientists should, are all unanimous that the testicle does not enter into the pathology except by virtue of its location. Personally, my experience is in thorough accord with the expressions of the group I have named; though I have only opened the scrotum in twenty-five cases of acute gonorrheal epididymitis, I have never seen the inflammation extend to the testicle; in fact, the pearly whiteness of the tunica albuginea of the testicle is in rather striking contrast to the red, engorged and inflamed epididymis. The testicle is almost completely covered by the encroaching epididymis, and I fail to see where or how it could be adherent to the wall of the scrotum, and I would surely dislike to wear a lead plaster until all signs of thickening and induration disappear, which would often mean a lifetime.

It is apparent after a careful examination of the literature that it has been only in comparatively recent years that the involvement of the epididymis was recognized as paramount in gonorrheal infections. Baerman, in reporting the pathological findings of his series of twenty-eight cases, made some valuable deductions, which were in striking contrast to expressions which I have already quoted from text-books on surgery, and which should throw much light on the future care of these cases. They are: (1) In a considerable proportion of cases of epididymitis, abscesses are formed in the epididymis. (2) Suppuration is regularly followed by the appearance of hydrocele. (3) Gonococci are found in foci in the epididymis years after the urethral infection occurred. (4) Early puncture is advised to save the canal from occlusion. (5) The hydrocele should be punctured to improve the circulation. (6) Incision and drainage of the infected epididymis should be more frequently practiced.

To sum up our present understanding of this condition and the pathology existing, I will quote freely from Professor Hagner's article, which appeared in the *Medical Record*, December, 1906. He says: "(1) The disease is confined to the epididymis,

and that there was no change in the testicle proper in any of his cases; in one very severe case he punctured the tunica albuginea and observed an apparently healthy condition of the testicle. (2) There is a

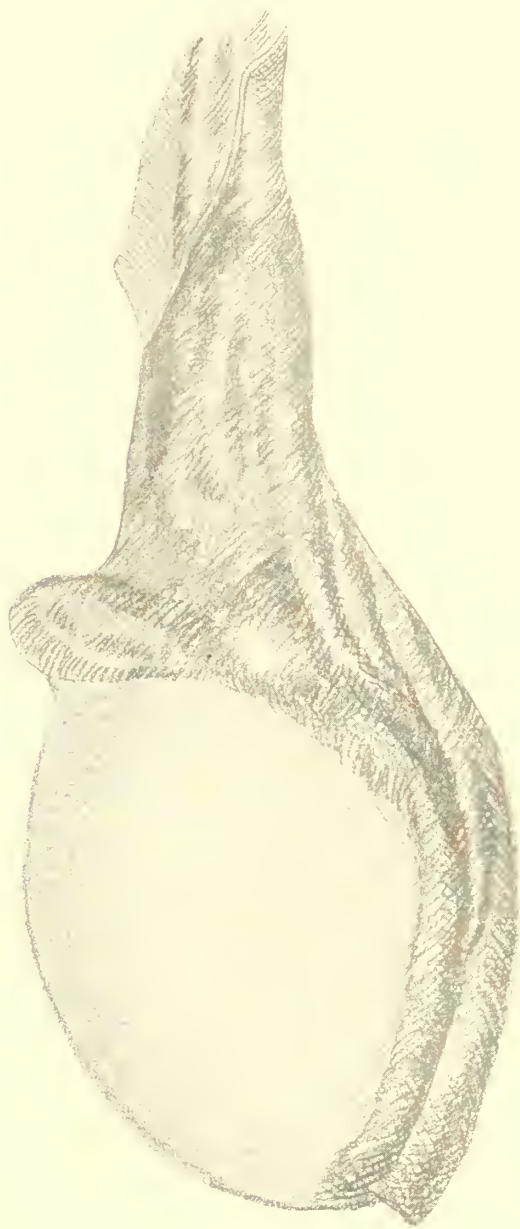


FIGURE 1

marked dilatation of all the tubes of the epididymis, which is due to the pressure caused by the infiltration of the inflammatory exudate into the connective tissue surrounding the tubules, resulting in more pressure at one point than another, and hence

the obstruction produced causes a backing up of degenerated epithelial cells, pus, refractive granular material and spermatazooids. (3) Such obstructions have been known to lead to degeneration of the seminiferous tubules and atrophy of the testicle."

Experiments made by Professor Hagner

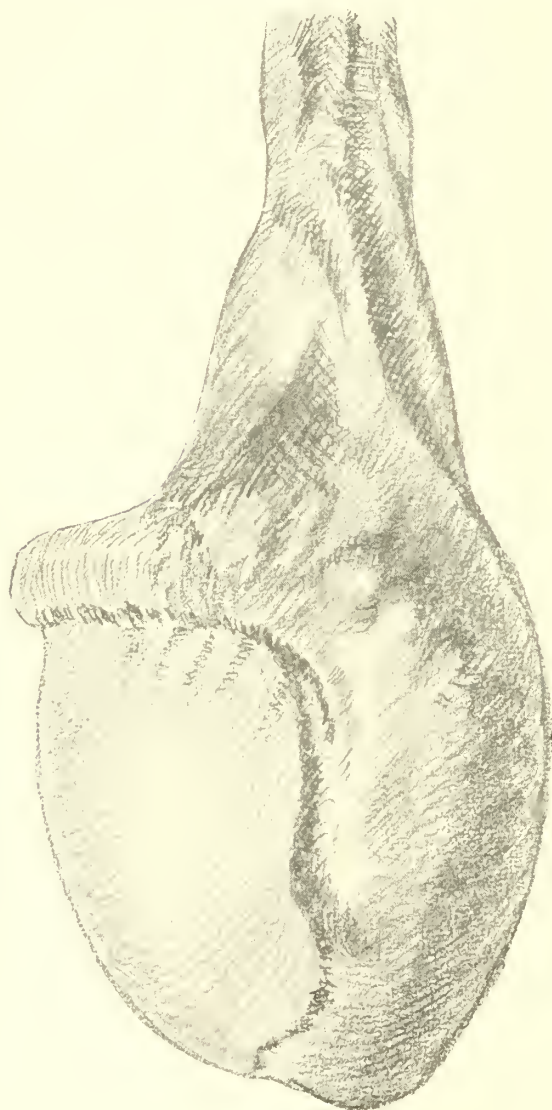


FIGURE 2

following the suggestions of Kocher and others in order to show that the enlargement of the epididymis was due to the inflammatory exudate into the cellular tissue surrounding the tubules, rather than to the changes which occur in the tubules themselves, was carried out in the following

manner, and I take the liberty of showing sketches made from photographs illustrating this condition. After having dissected off the connective fibrous tunic from the cord and having made an opening at its upper and anterior border, he fixed a canula into the cellular tissue. Through the canula he injected a weak solution of gentian violet. When the fibrous tunic had been sufficiently filled, he saw that the induration characteristic of this special form had been reproduced, and resembled an increase in size of the epididymis. Figure 1 shows the testicle, before injection, with the tunica vaginalis dissected off. Figure 2 shows the same after injection into the epididymis in the region of the globus major and minor. Certainly in a true epididymitis the infiltration is much greater than can be produced artificially. The colored sketches show very accurately the location of the inflammation, the adhesions, the plastic lymph and the formation of localized abscesses.

From these experiments and the observation of recent investigators we are compelled to believe that the infection passes into the epididymis and first involves the tubules, and it is in the lumen of these tubules that the inflammation first begins, producing swelling, which extends to the connective tissue, which, in turn, exercises by virtue of pressure on the tubes an obstruction to the outflow of cast-off epithelium, spermatazoa, tubular secretion and pus. Evidently early in the process, nature seals the avenue of connection between the epididymis and the testicle in a protective sort of way, just as she seals the fimbriated extremity of the fallopian tube to prevent peritonitis in gonorrheal pus tubes. Hagner states that this obstruction is capable of producing atrophy of the testicle. This statement is applicable to all other glands when their ducts are occluded, but not so of the testicle. Experiments of Curling, Hunter, Gosselin and others have shown that the vas may be obliterated without affecting the development or health of the testicle. White and Kirby have recently made experiments proving this to be true.

While atrophy of the testicle is probably

not one of the results, I am sure that fatty degeneration of the tubular system of the testicle does occasionally result and is the cause of the small, undeveloped testicles which we sometimes see following an attack of epididymitis, or more often see following involvement of the testicle secondary to hematogenous infections as in mumps, etc.

It has, however, been conclusively proved that the infiltration is in the connective tissue surrounding the tubules, which infiltration and edema produces obstruction, sufficient to cause ballooning of the epididymis and squeezing of the testicle; therefore, does it not appear reasonable that the suggestion of puncturing this connective tissue sack, lessening the edema and relieving the obstruction, would not only be sensible but a perfectly justifiable surgical procedure?

We are all agreed, except the text-books which I have quoted, that the old method of treating epididymitis was relatively unsatisfactory. Our patients were compelled to remain in bed from ten days to two weeks; they ran a temperature varying from 100 to 104 degrees, suffering intense pain, frequently requiring large doses of opiates to relieve them, while we diligently applied first hot, then cold, then poultices of flax meal and tobacco, changing to ointments we used everything from belladonna to ichthyol and a host of other remedies which by their very number give evidence of their unsatisfactory results; and then, when time has passed, have our patients leave their beds with an enlarged epididymis and see the nodule in the globus major or minor remain for months and often for a lifetime.

Such has been my experience and I have seen not a few of them. With the method of incision which I am about to describe, the pain is immediately relieved, the temperature falls to normal within forty-eight hours, the leucocytosis falls very rapidly, usually reaching normal by the third day, and the patients are rarely confined to bed longer than five days, frequently able to go about their business on the fourth day.

As to the results following an acute epididymitis, we can speak with at least some degree of certainty, after treatment by the

old plan. I regret that the operative treatment has been in use an insufficiently long time for correct comparative deductions as to sterility and tuberculosis to be made, but that they recover without the existing nodule is to be noted as a fact.

The text books at my command are peculiarly silent relative to this result following an acute epididymitis, a fair average, would be to say with Casper, that "the majority of childless marriages, in which the husband is at fault, are dependent upon a double epididymitis." Sanger was able to find spermatazoa in the semen of only eight out of eighty-three men who had been affected with double epididymitis. I have recently had a patient upon whom I did an epididymotomy for left sided epididymitis last December. He returned with a right-sided epididymitis on May 1, and the same operation was performed upon the right side. I was so unfortunate as to get a violent infection in this case, and on the 6th was compelled to remove the right testicle. Semen obtained from the patient on the 14th contained active, motile spermatazoa, which were mixed with pus, which will, of course, influence their fecundating power.

Without attempting to dwell upon hydrocele and tuberculosis, which were commonly sequels with the older methods of treatment, I will describe in Hagner's own words his method of operating upon these cases:

"The patient is prepared as for a major operation and then anesthetized. Cocaine is not practicable because of the pain in handling the parts after the initial step. (I have performed the operation twice, using cocaine with fairly satisfactory results, the patients complaining only moderately.) At the juncture of the swollen epididymis and the testicle an incision 6 to 10 cm. in length, depending upon the amount of enlargement, is made through the scrotum down to the tunica vaginalis, which is opened at the juncture of the epididymis and the testicle. The fluid is evacuated and the enlarged epididymis is examined through the wound. The testicle with its adnexa is delivered from the tunica vaginalis and enveloped with warm towels. The epididymis is then

examined and multiple punctures made through its fibrous covering with a tenotome, especially over those portions where the enlargement and thickening is greatest. The knife is carried deep enough to penetrate the thickened fibrous capsule and enter the infiltrated connective tissue. When the knife is through the thickened covering of the epididymis a very marked lessening of resistance will be felt. If pus be seen to escape from any of the punctures, the opening is enlarged and a small probe inserted in the direction from which the pus flows. By this method I believe there is less danger of injuring the tubes of the epididymis than by cutting with a knife. After the probe is passed in, pus will be evacuated by light massage in the region of the abscess, and a fine pointed syringe is used to wash out the cavity with a one to one thousand solution of bichloride of mercury, followed by normal salt solution. The incision of the tunica vaginalis is lightly closed with a running cat-gut suture, a cigarette drain of gauze is then applied over the incision, the skin being brought together with a silver wire suture placed subcutaneously, the cigarette drain passing out at the lower end of the wound. Silver foil and a sterile dressing are now applied and the part supported by a wide T bandage."

I have followed the steps as above described by Dr. Hagner, except in so far as I have substituted silver nitrate 1 per cent solution for the bichloride which he uses, in my last ten cases, and am sure that it gives better results. The operation is exceedingly simple, requiring no extra skill in its performance, no large array of instruments, and is accompanied by no danger.

CASE REPORTS.

Case 1.—John W., age 30, was admitted to the hospital on Christmas Day, 1909. This negro had been treated in the out-door department for an acute gonorrhea for ten days prior to his admission, he had had clap before and gave evidence of previous infection of his posterior urethra.

The epididymis on the left side was acutely inflamed, intensely painful to such degree that the slightest effort at examination was resisted. On admission his temperature was 102 at 3 p. m. pulse 110, respiration 24; at 6 p. m. his temperature was 103. The morning of the 26th it had fallen to 101. A leucocyte count on the 26th showed 14,000 whites, differential not made. The usual treatment of guaiacol applications was resorted to in this case, with support and rest, until Monday, the 28th, when I incised the tunic and punctured the epididymis liberally washing it out with bichloride, as had been suggested by Prof. Hagner. This being my first case, I was greatly interested and gave the patient rather careful observation. He reacted from the anesthetic readily, and remarked on the absence of pain. No anodyne or opiate was necessary following the operation. The temperature reached normal at the end of the second day and the leucocyte count was 6,000. He left the hospital on the fifth day after the operation with the wound practically healed, no pain, very slight induration, which was entirely gone ten days later. At a subsequent exhibition of this case to my class I could not tell which side I had operated upon.

Case 2.—S. Goodman, age 24, had his first attack of gonorrhea in November, 1909, which lasted for three months, during which time he was treated by a local physician with permanganate irrigations and injections; during the latter part of his treatment he was sounded and deep urethral injections of silver nitrate were used. This was followed by an acute inflammation of the epididymis, for which he consulted me on March 10. He was in such pain that he could not leave his bed and had me call to see him at his home. The left epididymis was acutely inflamed, much swollen and extremely tender, temperature 102.2. He had been confined to his bed for three or four days and his physician had repeatedly given him opiates to relieve the pain. He was using an ice bag and belladonna ointment locally. I advised puncture of the epididymis, and explained to him the nature of the operation, to which he readily consent-

ed. On the follownig day he was removed to a local infirmary, and under general anaesthesia the operation was done. The tunica vaginalis contained an ounce of fluid in which no gonococci were demonstrated, a small amount of pus was found to exude from a puncture in the globus major near the testicle. This pus contained gonococci. The relief from pain was instantaneous, the temperature reached normal the following day, his general appearance looked changed for the better, he was up and about on the fifth day, and left the hospital at the end of a week.

Case 3.—L. Murphy, medical student, age 35, had an epididymitis of one week's standing. He had previously had gonorrhea for which he was treated by his preceptor some three years before. Contracted his second case in February, 1910, and one month later the epididymis became involved, the involvement of the epididymis was attributed to a sounding which a fellow student had done for him, presumably treating him for stricture of the urethra. This was one of the severest cases which I have seen, the scrotum was exceedingly red and inflamed, edematous and the epididymis exquisitely tender, the cord was indurated well up into the canal. He suffered from nausea, chilly sensations, sweats and extreme pain in the back. Leucocytosis in this case was 18000, temperature fluctuated from 101 to 103. Operation March 12, 1910. The skin was considerably infiltrated, the tunica vaginalis contained half an ounce of straw-colored fluid containing floating particles of lymph, and at places was glued together by rather tenacious bands of this substance, the tunic covering the epididymis was violently inflamed and showed evidence of punctate hemorrhages, pus was found in small quantity in the globus minor. The pus did not show gonococci, cultures were not made.

The relief from pain in this case was more evident than in any I have ever seen. He begged to be allowed to sit up on the following day, which was not permitted. His leucocyte count was normal on the third day, having fallen gradually since the operation, also his temperature. He was per-

mitted to return to his studies in five days, though not entirely well.

The swelling and induration disappeared rather slowly, but at the end of the college term in May, had entirely disappeared and no evidence of a nodule could be determined.

Case 4.—Sam Slifkin, age 42, no previous gonorrhea. Contracted this case early in January, 1910, and had been treated by various friends and drug clerks; had recently discontinued all treatment and resorted to intercourse. After a rather severe night's debauchery he felt some pain in his testicle, which quickly became swollen and quite painful. He consulted the outdoor department of the Tennessee Hospital, where he was advised to go to bed and use ice bags locally. One week after the development of the epididymitis he was admitted to the Tennessee Hospital on the 13th of April, when I first saw him. It was quite a typical picture of this condition, rather severe pain, considerable swelling, induration of the cord, pain in the back, constipation, chilly sensations, etc. Temperature 102, leucocyte count 12000. Operation April 13. Free fluid in the tunica vaginalis, amount small, no gonococci. Liberal puncture of the engorged epididymis revealed no pus. He had complete relief from pain after recovery from the anesthetic. Temperature was normal after thirty-six hours. He was permitted to leave the hospital on the 18th. I never saw him afterwards.

It would be tiresome to detail the entire list of twenty-five cases, in which nothing unusual has been encountered. The intensity of the process was found to vary in individuals, but I have refrained from operating upon the milder cases which were seen by me both in my private and hospital work. Generalizing, I will say that:

(1) I found free fluid in the tunic in every case. The amount was not large, and at no time exceeded an ounce and a half. The majority having from two to four drams. The fluid was always blood-stained and highly albuminous. No gonococci was found in the fluid in any of the series. Cultures from the fluid was not made.

(2) Pus was found in six cases, and gonococci was demonstrated in five of them. The usual location was an abscess at the junction of the epididymis and the testicle.

(3) There was an immediate subsidence of pain in every case.

(4) The temperature would fall immediately and reached normal rarely later than the third day.

(5) In keeping with the fall in temperature, there was a distinct and positive fall in leucocytosis, in all except in the last case, which I have already referred to. The leucocyte count frequently falling from 18 or 20000 to 8 or 10000 within twenty-four hours. In this last case referred to, the leucocyte count increased from 14 to 20000 on the second day and remained high until the testicle was removed, when there was an immediate fall to normal.

In view of the above facts, I feel with Hagner, that we are justified in making the following deductions:

1. According to known pathology it is a rational procedure.

2. If care be exercised, the danger to the patient is slight.

3. The infiltration of the epididymis disappears more rapidly.

4. The danger of permanent injury to the epididymis and testicle is lessened.

5. The patients are absolutely relieved from pain on recovery from the anesthetic.

6. The systemic symptoms are promptly relieved.

7. Medical treatment will usually be followed only by relative relief and not by a permanent cure, because the infecting agent remains.

Therefore, the most rational way to do away with this is by incision, irrigation and drainage.

WHEN DOES THE GONORRHEIC CEASE TO BE INFECTIOUS?*

BY C. F. ANDERSON, M.D., NASHVILLE, TENN.
Lecturer on Venereal Diseases, Medical Department, Vanderbilt University.

Almost since the acceptance of the gonococcus of Neisser as the cause of specific

urethritis, it has been held that the organism can and may linger almost indefinitely in the genito-urinary tract of the male, giving rise often to no symptoms; its presence not being recognized until such time as its host conveys it to fresh soil, then is lighted up a gonorrhea in the newly infected party, from which the original bearer may acquire an acute attack. This may cause a false accusation against an innocent wife, when in reality it is one of his own unrecognized chickens come home to roost.

Statistics on gonorrhea are very misleading. In the first place, it seems to me practically impossible to compile correct statistics. It is estimated that from 80 to 90 per cent of the males have at some time gonorrhea. We know that the majority of these men marry, and we further know that no such proportion of females are infected. This alone proves to us that the majority of men who have gonorrhea become and remain absolutely clean and sound.

Neoggerath startled the medical profession with the statement "that 90 per cent of the gonorrhea in men remained uncured, and that in *every* instance the disease was transmitted to the wife."

Ricord said that his idea of hell was a place where he would meet those whom he had failed to cure of a clap.

Lawson Tait said that "the man who had clap should not be allowed to marry until a red hot poker had been passed through his urethra."

A great many, including some of our most prominent men, have said that the disease is incurable. Such statements as these sound conclusive, but we now know them to be without scientific value.

In going over the literature one is struck with the idea of pessimism that seems to prevail, as to the curability of gonorrhea.

Wolbarst reported in the *Medical Record*, August 21, 1909, thirty-five interesting cases, selected from over three hundred, with special reference to the tenacity and persistency of gonococci in the prostate gland (and we know that the prostate is the

hiding place of this organism in most chronic cases. He divided these into two classes:

1. Those that showed clinical symptoms, twenty-one in number.

2. Those that did not show symptoms, but came for advice preparatory to marriage, fourteen in number.

Of the first class, he found gonococci present in ten of the twenty-one cases.

The duration of the attack was from three months to twenty years. The only surprising feature of this report is that he did not find a much larger percentage infectious.

In the second class, gonococci were present in six of the fourteen cases. The time elapsing from the date of the last gonorrhea in these cases was from six months to eighteen years.

I would just like to call attention to the fact that those cases, three in number, that claim eighteen years since any signs of gonorrhea, are open to the suspicion of a symptom that is common to all venereal diseases—lying.

In these cases from three to as many as nineteen microscopical examinations of the expressed secretion from the irritated prostate were made. From this report we must conclude, first, that gonococci can and do remain in the prostate for as long as twenty years; second, that they may remain there without producing any symptoms. While this report does not prove conclusively that most cases do not contain gonococci, the organism was not found even by this diligent search, so, as far as we can go, those cases are sound and clear.

Many other workers have carried out similar experiments with about the same results.

With these facts before us we know that most cases of gonorrhea get well, as we also know that some cases lie dormant for a long period of time and may or may not be infectious.

Now, which cases are infectious or when does a given case cease to be infectious? The patient comes to us with this question, "May I get married?"

Gentlemen, this is a very important question and so much depends upon the correctness of our answer. No man that has had gonorrhea should get married without asking his doctor this question. Unfortunately, it is not an easy one to answer; indeed, it is so difficult that scarcely any two authorities agree as to a criteria upon which the answer should be based. Too many men look upon it in a light-hearted way and say that as soon as he is down to the usual morning drop that he is no longer infectious. It would be more absurd to follow those who say, "Once a gonorrheic, always a gonorrheic; once infected, always infectious."

When does the gonorrheic cease to be in danger of infecting the woman with whom he cohabits? Not until the gonococci have been entirely eliminated from him. The gonococcus is the sole infectious agent. If it is present, there is danger; if not, there is none. But to find the gonococcus is no easy matter.

I shall not take up your time discussing the clinical evidence of the presence of this germ, such as the ever-present morning drop that persists in spite of wind or weather; likewise with the rest of the train of symptoms that go to make up the picture of chronic gonorrhea—frequent outbreaks of the discharge, increased frequency of urination, reflex pains extending to various parts of the body, involuntary seminal emissions, premature ejaculations, and the multitudinous forms and varieties of symptoms that lie on the borderland of true neurasthenia.

At the present time it is generally conceded that no case of urethritis should be diagnosed gonorrhea, to say nothing of being pronounced cured without the aid of the microscope or culture tube; of course, remembering that the bacteriologist is not infallible.

This brings us to a perplexing question: Does the microscope tell us to a certainty that the germ we see is the real gonococcus of Neisser? Are we justifiable in regarding the gram stain as absolutely certain?

There is no doubt but that positive cul-

tures would be more convincing, but in view of the difficulty of culture of the gonococcus, and remembering that these examinations are the duty of the practicing physician or specialist rather than the bacteriologist, I believe the microscopical method conscientiously carried out should be accepted as sufficient for our purpose.

Let it be assumed for present purposes that the applicant for examination has had one or several attacks of gonorrhea. Let it be assumed further, that for several months or even years thereafter he observed no vestige of the disease.

With the view of obtaining evidence, while the genito-urinary tract is in the most favorable condition, that of irritation, the applicant is instructed:

1. To drink beer or whisky, and if he is in the habit of doing this, to consume more than usual; of course, not to the extent of inebriation.

2. Take an unusual amount of exercise, like walking, dancing, horseback riding, etc., in order to contribute to the genito-urinary irritation.

These tests should be carried to the extreme, extending over a period of several days to a week's time, unless a perceptible disturbance is obtained before this time, such as an excess of urethral secretion or a slight discomfort on urination, at which time it will be in order to proceed with the next step of the investigation.

URETHRAL SPECIMENS FOR MICROSCOPE.

The patient is told to come to the office in the morning before voiding. The urethra is stripped and slides obtained. Then the first urine is saved to be centrifuged and stained for examination. If for any reason the patient cannot come to the office before passing the morning urine, he is given slides and instructed how to obtain specimens; he should also be furnished with a sterile bottle for the first urine.

SPECIMENS FROM PROSTATE AND SEMINAL VESICLES.

If this preliminary preparation has not resulted in a recrudescence of the discharge, the prostate and seminal vesicles are milked

for specimens, which should be done with a full bladder, both for the ease with which the procedure is carried out and with the idea of obtaining a specimen of the urine directly thereafter which is likely to contain some of the expressed secretion.

URETHROSCOPY.

If by this time there is no auto-infection, specimens from any enlarged crypt or follicle may be taken through the urethroscope. Our search should not stop here in the face of negative findings.

ARTIFICIAL LOCAL IRRITATION.

The injection of a 1 per cent solution of silver nitrate into the urethra will set up a urethritis, the secretion from which may present the offending micro-organism. A good plan is to inject the silver solution one day to be followed the next by the prostatic massage. This is probably the most fruitful of all the procedures. It will invariably produce sufficient inflammation to make a discharge, and if there are any gonococci present they will be most apt to resume their activity and be present in the discharge.

Dilatation of the urethra by means of large sounds or preferably with a Kollman's dilator will produce an irritation and thereby a discharge, and at the same time may mechanically squeeze out the material that is held in some crypt or gland, thus affording additional opportunity for search. These examinations should be carried out at intervals of forty-eight hours, and extending over such length of time as it takes to find the gonococcus or convince you that further search would be useless.

This brings us to another important question: How are we to tell that there are no more gonococci in the genito-urinary tract? Not to find them does not mean that they are not there. The only way in which we can be enlightened is to make repeated examinations with the microscope. After we have made so many with negative findings, that we feel morally certain that further effort would be of no avail, we may then and not till then inform our patient

that we have gone to the limit of our searching power. We may then tell the patient that he is free to marry—with this one reservation—that it is barely possible for him to harbor gonococci, that may some time in the future resume their activity. We should always remember that there is a difference in not finding the germs and the patient not having them.

Another question that may be asked is: Are we justified in stirring up the genito-urinary tract in this way in a patient that presents no symptoms? Opinions on this point will differ. Some will say, get rid of the germ by all means. While others will say let them alone while they are doing no harm, they may be quiescent for all time to come. This admits of argument on both sides. If gonococci lie in the prostate for years in every case, then they are certainly not always infectious. We have all known many men to marry that have had gonorrhea and not infect their wives. However, most of us don't believe that the infecting agent lies in the urethra for many years in all cases, many cases get sound and well and remain so. It is our duty to search them all in order to detect those that do harbor the infection. Therefore I think all these cases should be searched to the utmost before they are given a clean bill of health to marry.

DISCUSSION.

Dr. Perry Bromberg, Nashville.—Dr. Anderson has presented to the association a very valuable paper, one that I feel it would be well for us, particularly those of us who are interested in the treatment of this disease, to take home with us and to practice the lesson he has outlined to the utmost. Those of us who have had experience in the treatment of gonorrhea know very well how difficult it is to effect a cure of this disease. Those of us who make microscopical examinations of the secretions know that in the drop of Venus gonococci will be found. Whereas they would not be found by the ordinary practitioner who does not examine microscopically this secretion. We find patients coming from other physicians saying they have been treated for eight or nine months, but they have nothing but the morning drop. This discharge continues, but it is not sufficient to simply prescribe an antiseptic for the patient without further examination as to whether or not that discharge contains gonococci. It is not

sufficient for us to simply take a slide of the discharge stained with methylene blue and find the diplococcus and call it the gonococcus and be satisfied, but it is necessary to make a Gram stain. I certainly commend the recommendations made in the paper for the counterstaining by the Gram method. I think it is a matter of utter impossibility for any physician to say that a gonorrheal subject is no longer capable of transmitting infection. We see patients with gonorrhea that get well, or are supposedly well, who have the typical diplococcus which we recognize as the gonococcus. They will get well, and approximately twenty per cent of the cases of gonorrhea do so within four or five weeks. On the other hand, we find eighty per cent approximately of all cases of gonorrhea, no matter by whom treated, that the disease extends to the posterior urethra and reaches the prostate sooner or later. Granting we have a follicular prostatitis, there is a point of differentiation here. If the disease remains in the follicles of the prostate, these cases frequently get well, but if it goes from the follicle down into the parenchyma of the prostate and produces parenchymatous prostatitis, gonorrheal in origin, the small follicles opening in the prostatic urethra will be closed by inflammatory exudate, and the gonococci will remain in the prostate itself and live there for an indefinite period, just as they are capable of living in the pus tube of a female, becoming sterile in time. This may be true in many instances, and so in gonorrheal prostatitis, nature seems to destroy the effect of the organism. On the other hand, there is a small percentage of cases which will remain permanently capable of producing infection for a number of years.

Dr. William Litterer, Nashville.—This is one of the most important papers that has been presented to this association. I shall only speak from the bacteriological standpoint of the subject. I wish to lay emphasis as to what the essayist has said and also elaborated by Dr. Bromberg, that mere examination with methylene blue will not always tell you whether you have gonococci present or not. Still, it is a most valuable method especially in the acute cases, but when the case assumes a chronic type, with the entrance of a mixed infection showing other cocci than the gonococci, the methylene blue method has many shortcomings. The Gram's method of staining is without a doubt the very best and most reliable quick method of differentiating the gonococci from most other micrococci that have become phagocytized. This method should be employed in every instance in examination of vaginal discharges. The Gram's method sometimes fails to reveal the true identity of the said micrococcus. When this is the case, then we will have to resort to cultural methods for absolute identification. The question as to whether a given case is cured is truly a pertinent one. We all have been asked the question many times as to whether a given case could marry or not. Their discharges by many repeated examinations by the methylene blue and Gram's meth-

ods reveal no evidence of the gonococci, still some of these cases may harbor gonococci of such virulence as to infect. I have been working on a special culture media with a view to devising a method by which we can facilitate and make more certain the finding of the gonococcus. This culture method by special culture media has proved to be exceedingly trustworthy. I have on numerous occasions obtained repeated negative findings by slides when the culture method would reveal the presence of a Neisserian infection. The culture media that I use for the isolation of the gonocci consist of equal parts of the patient's urine and blood with eight parts of glucose agar. I conceived the idea that the patient's own blood would be lowered in opsonic power, hence a better culture media than other blood. This contention has proved correct. The employment of the patient's own urine likewise facilitates their growth. I am convinced that by the use of the cultural method, offers us a far more certain means of diagnosing whether a given case is still infected and capable of transmitting the disease than any other means at our command. I have been somewhat successful in treating these chronic cases with the autogenous vaccine. Invariably in these chronic cases quite a number of other micro-organisms are found. All varieties are isolated, and an autogenous vaccine made. It is not uncommon to obtain four or five different bacteria together with the gonococcus. To my mind it is as essential to get rid of the invading micro-organisms as it is to eliminate the gonococcus. The vaccine treatment apparently offers us some hope in these intractable cases.

Dr. W. Frank Glenn, Nashville.—This subject is so interesting to me that I cannot refrain from saying a few words. Many years ago, when Ricord, who, I believe, was the pioneer specialist in venereal and genito-urinary diseases, was lecturing to his class on the symptoms of gonorrhea, he stopped in the middle of the lecture and said: "Gentlemen, it is useless to keep on relating symptoms. Any man can tell when he has got clap, but God only can tell when he will get rid of it." That seems to be the consensus of opinion here today. Later on, Noeggerath stated that when a man once had gonorrhea he never got rid of it. Noeggerath pointed out the dangers and diseases attendant upon gonorrhea. It was an every day occurrence for patients with gonorrhea to come to quote Noeggerath. To show you what effect Noeggerath's statement has on the average patient, I will say that a recent graduate told me that he would never get well as long as he lived. But a few years later, Robert W. Taylor answered the question, and the tide was stemmed. While I recognize the seriousness of gonorrhea, I know the germs lie embedded for years, but under the influence of excessive sexual intercourse and alcoholism, gonorrhea develops anew; yet, at the same time, I am fully aware that there are many men who get absolutely well of gonorrhea and marry, and never infect their wives in any de-

gree whatever. I believe in cities ninety per cent of the male population, who have reached the age of twenty-five, have had at least one attack of gonorrhea; yet, at the same time, it is a serious disease, and we should never let a man marry until we, as members of the medical profession, can determine that he is free from gonococci.

Now, one remark on two different aspects of the cases Dr. Anderson brought out which is familiar to the specialist, but not to the general practitioner. Those men who have lived a life of liberty and have had attacks of gonorrhea suddenly become engaged to pure, virtuous women. They want to lead a life of reform. They say that their discharge has ceased; that they have gone eight months without sexual intercourse, and are perfectly well. We know as practitioners of medicine that there are embedded in the prostate gonococci, which, after excessive intercourse, in a week or two develop a full-fledged case of gonorrhea. They frequently blame the innocent wife, and case after case has been brought into court, and the man himself is to blame. He has given the disease to his wife, instead of the wife having transmitted it to him.

As to the morning tear, or simple drop, more or less transparent or milky, not usually pus-yellow in its color, with no symptom of pain, no frequency of urination, but a patient will tell you that for years every morning on getting up there is noticed this one drop, and it does not contain gonococci. It is frequently due to a slight stricture of large caliber in the membranous urethra as the result of a former gonorrhea, and pressure keeps up a sub-acute inflammation which is entirely free from any infecting organism, and it is just a drop of mucus. We can only determine this definitely by thoroughly milking the vesicles and prostate, not once, but frequently, six or eight times, and by examining it with the microscope and applying Gram's test we will be able to determine whether it contains gonococci or not.

Dr. E. A. Timmons, Columbia.—The question is asked, When does gonorrhea cease to be infectious? From one point of view that might be answered definitely or satisfactorily, and from another standpoint the answer might be questioned. Gonorrhea, like most every other disease that effects the human body, is rather self-limited in its course. In some cases it takes a longer time to run its course, while in others it requires a shorter time. It is evidently limited in its course by the production of antibodies that render the tissues likely unfertile for the further procedure of its activity; and, therefore, it may remain there during that time in a dormant state somewhat like the powder burns on a person's face after he is pronounced entirely well. Then, perhaps these antibodies, through a course of nature, may be eliminated or some other condition brought about locally which renders the field fertile for the reinfection of the disease that has lain there dormant. The urethra of the male is a better field for the development of

gonorrhea than the vagina of the female. Hence the latter can stand and overcome more, owing to the acid secretions of that canal, while that of the urethra will not. So in many cases gonococci are eliminated from the female vagina, when they are not from the male urethra. And I believe that in the majority of cases of gonorrhea pronounced cured, that more than likely we still have the germ there dormant, waiting for the field to be refertilized, as already stated, to take advantage of the locality in which it is placed, and even to develop in a woman afterwards, if the vagina is properly fertilized to receive and develop that particular case. I have some faith in the antigonococcic serum as a treatment after we have pronounced our cases cured to make doubly sure of our gonorrheal cases being cured.

Dr. B. J. Rash, Nashville.—I want to say a word or two for the country doctor. I have practiced in the country, and I want to say that most country doctors are too poor to have microscopes, and the patients are too poor to send their specimens to the city to be examined. A large number of these infections occur in the country. That may seem strange to you. A greater proportion of married women in the country are infected with gonorrhea in proportion to the number of men infected than there are in cities. I will tell you why. Because a man who becomes infected in the country does not get well, while the man who becomes infected in the city does get well. You get more cases of gonorrhea in the city than in the country because the prostitute goes through all country towns once or twice a year and meets these small boys and young men in the town. Prostitutes are in our cities all the time, and when they come to the country they invariably have gonorrhea. The young men in the country do not know the dangers of infecting the women they marry. They get married to some woman; they have no discharge, although they may be still infected and infect the woman.

This is a most excellent paper, and it has been very freely and well discussed, but it is just like a dead language to a good many of the country doctors, because most of them only looked through a microscope a few times when they attended a medical school. They went home and forever afterwards forgot what a microscope looked like; they have never been able to buy one, and they have never been able to send their patients nor specimens to the city to be examined, consequently their cases of gonorrhea in males, as far as a cure is concerned, are largely guesswork. In every county in the state we have a county health officer; and this brings up another point, namely, the enactment of a law. Every county appoints a county health officer, and the time is coming when there should be some men prepared to do microscopical, bacteriological, and pathological work for the county or for the doctors of the county. I hope to see the time come when the country doctors will have a

chance to send their specimens to some one and find out whether or not these men are still infected, and if they are infected they ought not to be allowed to marry.

Dr. E. F. Newell, Chattanooga.—The author of the paper asked the question, "When does gonorrhea cease to be infectious?" I would much prefer to have him tell us how to cure these old gonorrheal cases. There is nothing that harasses a doctor more than a case of chronic gonorrhea. They are the hardest cases to cure that I know of. The meatus is glued together in the morning; the patients will have shreds, and on making a microscopic examination we will find diplococci in the discharge, but we do not know to a certainty whether the patient has gonorrhea or not, because we cannot always find gonococci; or whether we have a diplococcic or mixed infection. Seemingly we cannot cure these patients, no matter what we do for them, especially if they are Greeks or Italians. Many of you gentlemen who have treated South American fellows for gonorrhea know how difficult it is to effect a cure. If you tell them what a shred is they almost become crazy. Even after you have treated these patients until there is no discharge, or no sensation of pain or discomfort on urination, they will examine their urine every morning, and I do not believe any practitioner can treat Italian or Greek laborers, successfully who have had gonorrhea four or five times, who are dirty in their habits, and expect to get a cure. We cannot be sure that we have cured them, and I have my doubts whether we ever cure these cases. They do not observe hygienic rules. They abuse themselves, they are sexually perverted, and I do not believe these cases are ever cured.

Dr. Anderson (closing).—I have nothing further to add except to thank the gentlemen for the kind words they have devoted to my paper. As to the practice of the country doctor, I find they are getting microscopes, and are doing just as good work with them as other practitioners. Dr. Timmons spoke of gonorrhea being a self-limited disease. Personally, I have never taken much stock in the self-limited proposition. The only way in which it is self-limited is, that it is limited to that man as long as he is a man, if he is not treated properly. Treatment is the only possible chance for him to get well.

Dr. Timmons.—In using the term self-limited, I meant that the gonococci lose their virulence by the formation of antibodies; that they remain in an inactive state, but when the field becomes fertilized the reinfection takes place.

Dr. Anderson.—Those are well known facts. The only reason the patient gets well after the acute symptoms have subsided is because his resistance overcomes a large part of the disease, the gonococci become inactive, but later under some stimulation they may cause a reinfection.

TREATMENT OF CANCER OF THE SKIN AND MUCOUS MEMBRANE.*

BY J. M. KING, M.D.,

Professor of Dermatology, Medical Department, Vanderbilt University.

I wish to refer particularly to cancer of the skin and mucous membrane. The growth on the skin may begin to develop anywhere on the surface of the body, but it most often occurs about the face. On the mucous membrane it may begin in the mouth, as on the inner margin of the lips, on the alveolar processes, and on the tongue, and occasionally it is found in the nose and frequently on the cervix uteri.

I cannot discuss in full the literature relative to the cause of this disease, and shall be content to give briefly my own observation in a few cases. I am inclined to believe that traumatism, injury or irritation has much to do with the origin and beginning of a cancer. I have seen and treated several cases that could be apparently traced back to an injury of the skin or mucous membrane. One case traced back to a bee sting on a mole, another to a sting on the forehead, another to a wound with a hair pin on the forehead, another to the squeezing of a blackhead out of the skin, and another to a wound from a dental instrument on the gum. While in one's experience only a few cases can be directly traced to injury, there may be many resulting from unrecognized injuries. It is further known at present that prolonged and undue irritation from X-rays on the skin will result in the outgrowth of cancer, as is demonstrated on many workers with X-rays. I have observed this condition in several cases of men who have worked constantly over long periods with X-rays.

Cancer frequently develops on the lip of constant smokers, and this leads us to believe that the irritation from the pipe stem or the cigar may have something to do with the original cause of the growth. Something sets up an abnormal proliferation of epithelial tissue, and whether that is only

the injury pure and simple, and I mean by this a disturbance of the cellular arrangement, or whether it is due to an inoculation, we do not at present know. The only early observation to be made, either clinically or microscopically, is that the epithelium begins to grow, and a tumor forms which will not yield to ordinary remedies, and in diagnosis and treatment this last fact must be kept clear in mind. We do not know the cause, but we can observe the tumor and destroy the cellular growth, and the earlier the observation and diagnosis are made the more easily the destruction may be accomplished. If the growth of epithelium is excited by the presence of a micro-organism, this germ does not pass rapidly out in the surrounding tissue as far as we are able to observe clinically, yet, when excision of even a small cancer is made, so often a recurrence follows in the wound of excision or adjoining tissue. This recurrence may be attributed to cell metastasis or migration of the cancer organism. However, this is mere speculation.

We have the general impression that cancer is limited to the aged, but I wish to emphasize the fact that this impression is erroneous. The majority of cases occur then, but I have seen several cases developing during the twenties.

Early diagnosis and radical destructive treatment are the main points in handling a case of cancer; and if this is done, the case on the skin, as a rule, recovers quickly. But when will we physicians do this? And when will the layman go to his physician for the early treatment of cancer instead of going to the quack? When will the influence of the quack fail to exist? I cannot refrain from discussing this phase of the subject at this point, for I have seen so much evil done by the quack and so much also resulting from failure of our profession to take hold of the treatment of cancer as it should. We treat tuberculosis, syphilis and other conditions which are really more difficult to handle than an incipient cancer of the skin. We have been derelict indeed in grappling with this question. The situa-

* Read before Nashville Academy of Medicine, May, 1911.

tion is impressed upon me because almost daily I see some patient who has been treated by a quack and is still in bad condition. We are responsible for this situation. As a whole, we should be better informed on the diagnosis and treatment of cancer. When we can tell a patient that he has a cancer, but it can be cured, we will have solved the question. The public will have confidence in us and will not seek the quack. In every city and town in the state some one has an X-ray machine and can do this work, and it behooves us to take hold of this disease as we do any other disease and handle it properly.

Briefly the lesion may be a small, chronic, red, scaly, flat patch but slightly infiltrated, it may be elevated, small, whitish or opalescent in appearance, hard, and may or may not have a small depressed center; it may be larger, ulcerated, with pus and crusts, with an elevated rolled margin which is hard, or there may be ulceration without very much of a rolled margin; no pain and no itching. Syphilis, lupus, eczema and blastomycosis must be eliminated in the diagnosis.

The management of the case is the most important question to discuss, and really this is best learned by experience. The X-ray constitutes the chief therapeutic agent we rely upon at the present time. Radium is not superior to the X-ray and its cost forbids its general use. Yet, while the X-ray is the most important agent, other means may be used in selected cases.

In the treatment of a flat, scaly lesion which presents evidence of malignancy, the X-ray without any other interference would be sufficient to relieve the condition. The lesion should be exposed to X-rays for three or four times a week until a positive and rather severe dermatitis has been produced. Then the lesion should be sponged with a simple antiseptic lotion and covered with zinc oxide ointment once or twice a day. A very superficial cancer may be treated successfully with carbon di-oxide snow.

If the lesion is small, an eighth or a quarter of an inch in diameter, slightly elevated, of soft, epithelial growth, it may be removed

with a sharp curette and the base treated with the acid nitrate of mercury, or the lesion could be removed with an electric cautery. Then the surrounding skin for about a quarter of an inch should be exposed to X-rays until a mild dermatitis is produced in order to destroy any outlying foci which may cause a return.

If the lesion is larger it is not safe to content one's self with indifferent treatment. The lesion, after using a local anesthetic around it, may be removed with a curette, knife, or cautery, and the open wound exposed to the X-ray until a marked reaction is produced. The sore is then allowed to go through the course of inflammation from the X-ray and to heal.

If the cancer is of long standing and there is ulceration and the lesion is deep-seated and one or one and a half inches in width, then an incision with the knife should be done and the open wound should be exposed to X-rays of deep penetration to the extent, just short of producing a permanent X-ray burn, and the wound allowed to heal by granulation. The healing will be rather slow.

Cancer of the lip is the most treacherous of all. Only the most superficial kind should we dare treat with the X-ray alone. If the cancer has become at all deep-seated in the lip, there is only one course to pursue, in my opinion, and that is to remove the growth with a wide rectangular excision, close the wound and then after four or five days begin the exposure to strong, deep penetrating X-rays. If the glands are involved I doubt the wisdom of interference of any kind except the use of X-rays to retard the growth of the tumor.

Cancer of the mucous membrane—tongue and alveolar process—does not yield to the X-ray or to Radium. Cancer in this location should be removed surgically—wide of the lesion—and this should be done as early as possible. It is often the case that malignant lesions on the tongue and gums are treated for a long time as simple ulcerations and the malignancy not recognized until too late. Valuable time is lost. The microscope has shown so many of these lesions to be

malignant that a few years ago were thought to be simple at their beginning. Since there is no accompanying aid such as the X-ray in the treatment here, the excision should be as wide as possible and as early as possible. If a small lesion is suspected a piece should be taken for examination.

As we all know, when the glands become involved there is but little hope, even from their removal.

Cancer of the cervix uteri falls within the domain of surgery. The only benefit that is derived from the X-ray in the treatment of cancer of the mucous membrane is the retarding of the growth and lessening the discharge. It does not cure in the cases upon which it has been tried.

In the treatment of cancer of the skin the plan is to remove the redundant overlying tissue with the curette, cautery or knife when it is necessary and then destroy the remnants of the disease by strong use of the X-ray. The X-ray would ultimately destroy all of the redundant cancerous tissues, but much more time would be required than when the tissue is removed, and the scar left after treatment when the curette or cautery are used is larger than when the X-ray alone is used, but few patients complain of a scar when they know their recovery has been hastened by the making of it. The surgery referred to here is merely a means to an end, and must not be considered to be a curative step. I could cite a number of cases treated according to the principles set forth here, but I do not think it necessary.

In conclusion I would state:

1. Cancer is often associated with a local irritation or traumatism.

2. The earliest possible diagnosis should be made.

3. This would lead to the earliest possible treatment.

4. The profession at large should be more keen in the diagnosis and treatment of cancer. This would establish the confidence of laymen and eliminate the quack.

5. In the treatment at the present time the X-ray is the chief reliance.

6. Redundant tissue should be removed in order to increase the chance of recovery and also to shorten the time of treatment.

7. Cancer of the mucous membrane will not yield to the X-ray or Radium, and for this reason an early removal should be done surgically. In every case on the mucous membrane where there is doubt a biopsy should be made.

THE SUB-MUCOUS RESECTION OF THE NASAL SEPTUM.*

BY E. C. ELLETT, M.D., MEMPHIS, TENN.

Deflection of the nasal septum is one of the most common causes of nasal obstruction in adult life, and as such it deserves all the time and thought that have been spent in devising means to correct it. These have been found, at least until recently, if not wanting, at least not wholly satisfactory. It is not my purpose to go deeply into this subject; indeed, I want to do very little more than call your attention to one operation for its relief, but it would be well perhaps to remind you of a few of the procedures, now almost wholly abandoned, that have been advocated from time to time. "Gradual dilatation," or gradual reduction by pressure, with plugs or splints, "rapid dilatation," or forcing the septum in place at one sitting, as in Roberts' operation, failed because the height of the septum was greater than the height of the cavity containing it, and it could not stand upright. Bosworth sawed off the convexity of the deflection, and in some cases this does very well. The Asch operation, once very popular, consisted in making a crucial incision in the septum and forcibly straightening it. The over-lapping of the fragments took care of the redundancy of the tissue, and a splint was worn to keep everything in place till healed. My personal objections to this operation were its severity, the fact that it required a general anesthetic for its proper performance, the results are not necessarily permanent, the after treatment is long and unpleasant, and the bony piece which com-

* Read before Tennessee State Medical Association, April 11, 1911.

poses the lower part of the septum was with difficulty straightened when bent over. Methods of incision, such as the flap operation of Watson and Gleason, and especially the simpler and more generally applicable one of Greenfield Sluder, have a place. The most generally applicable, and to me the most satisfactory, and, except in a few localities by far the most popular plan to-day, is the sub-mucous resection. By this operation the twisted and deformed cartilage and bone are removed, the mucous lining of the nose is preserved intact, it is done under local anesthetic and without pain, the after treatment is short and not unpleasant, and as far as my experience goes, the results are in the main good. No operation can relieve every case. Some twisted noses are frankly beyond me, and in children the nostrils are sometimes too narrow to work in. For the former, I will do the best that I can. The latter necessitate waiting, or doing some other operation, preferably the Sluder.

Pages are devoted to the classification of septal deflections. For clinical purposes we can consider the deflections as simple and compound, and also as high and low, in reference to their relation to the nasal floor. Simple bends and high bends are easy to operate on. Compound and low bends are often difficult, especially if the deflection is angular.

Inquiry among my colleagues here has revealed the fact that not all of them have tried this operation, and those who have tried it have done it only a few times. One man told me he tried it in his office and the patient fainted, so he did something else, etc. The purpose of this paper is to give my personal experience and impressions of the operation and some pointers in regard to doing it. I did my first operation in 1906. I operated at 5 o'clock, after a hard day in my office, and with the patient sitting up. I had a nurse hold a light for me, and another one to steady the head. I assisted myself, and possibly on account of the poor assistant, it took me two hours. The conclusion of the operation found me, the patient and my two nurses completely ex-

hausted. In this case I got a perforation, but it was small, far back the edges are healed and it gives no trouble. A perforation will not give much trouble unless it is surrounded by exposed and ulcerating cartilage, which is not the case in the perforations following this operation. Since that time *I operate with the patient lying down*. This I want to emphasize, as I know of no one else who advocates it, and I know of no one thing that contributes so much to the success of the work and a lack of unpleasant occurrences. I have seen Ballenger, the godfather of this operation, try to do it with the patient sitting, and have him faint, and the operation had to be finished with him recumbent. They never faint lying down; they are at ease and so are you, and you do not hurry. *I operate at night*. I recently did two bad cases in two hours and a quarter, and many simple ones in less than thirty minutes, but if I operate at night, my next engagement is breakfast next morning, and I will take till then if necessary to do the work right. *I operate in a hospital*. I will not operate in my office or in a private residence. My work is appreciably better when my mind is free from responsibilities of preparation, cleanliness and after care. In any emergency I have everything at hand, and have, personally, the advantage of surroundings of my own arrangement and assistants whom I have trained myself. Lastly, *I operate with local anesthesia only*. In children who cannot be handled, I do some other operation. I have never had an adult patient who objected to the procedure. Since the first attempt, as mentioned above, Dr. Simpson, who is associated with me, and I have done about one hundred sub-mucous resections. I cannot, unfortunately, give the exact number, as the records are mixed up with other records, and for a time a list of operations at my infirmary was not kept. I have had two other perforations of the septum since the first case, and I am sure that Dr. Simpson has not had any more than this. Our technique, worked out together, is identical, and the results are very satisfactory to all concerned. While some, indeed many cases,

have not been left with anatomically perfect noses as far as the septum is concerned, the results clinically have been excellent. The breathing function is restored to the nostril, pressure and other symptoms relieved and one patient was promptly relieved of very severe attacks of asthma. In no case is the normal lining of the nose materially interfered with.

The question of illumination is a very important one, and while in many cases the ordinary head mirror and a 32 c. p. frosted globe gives sufficient light, it is not sufficient for work deep in the nostril. The most satisfactory light to me under these circumstances is the Klaar light.

Much of the work can be done with an ordinary speculum, such as the Bosworth or Pyncheon, held in the hand. The Allen-Heferman speculum is a very satisfactory self-retaining speculum and is very light and simple in design.

Elaborate attempts at sterilization of any mucous surface are probably not worth the trouble. Washing with some bland alkaline solution before and after the operation has given very good results. In fact, I have not seen a single instance of infection.

With the mucous membrane of both nostrils cocaineized and rendered as bloodless as possible with adrenalin, the speculum is introduced and the incision made in the mucous membrane, down to the cartilage. This incision is usually on the convex side of the septum and just behind the junction of the skin and mucous membrane.

In low deflections it is an advantage to prolong the incision backward at its lower end close to the floor of the nose. By raising the muco-perichondrium as a flap less tension is put on it in rounding sharp angles and the flap is not apt to be torn. Having completed the incision the muco-perichondrium is elevated, first with sharp, then blunt elevators, till it is raised up from the whole deflected area. In case of very sharp angular deflections it is better to go back only to the crest of the deflection at this time, and when the cartilage is removed this far back the rest of the tissues can be elevated with less danger of tearing the flap

than if the attempt is made to turn the corner and elevate the tissues all the way back without this.

Having elevated the tissues from the convex side, the little finger is introduced into the concave side and cutting down on it, the cartilage is incised with a knife just posterior to the mucous membrane incision and parallel to it, working from the convex side. This is the most delicate part of the operation, for here is where perforation of the muco-perichondrium of the concave side is apt to occur, with danger of a permanent perforation of the septum. The finger tip detects the point of the knife under the mucous membrane as soon as it penetrates the cartilage, and the incision can usually, with care, be completed without disaster. The object is, of course, to incise the cartilage only and not the muco-perichondrium. Working from this incision the elevator is used to raise the tissue from the concave side of the septum. You will understand that the only incision made is on the convex side, and if properly done, the soft tissues of the concave side are not incised or penetrated at all. Having completed the elevation on the concave side, the cartilage is now ready for removal. This can be done with angular knives, cutting forceps, etc., or, with what I much prefer, the swivel knife devised by Ballenger. Subsequently more cartilage, and, if necessary, bone, posteriorly and downwards, namely, the bony spine that forms the lower part of the septum, are removed, till the soft tissues hang straight from roof to floor and both nostrils are freely open. Much detail is omitted, as my purpose is to describe the plan of the operation only. Considerable ingenuity, patience and practice are necessary to do a good job in some cases, some of course being relatively easy. On the whole, I would class this operation as the most tedious and technically difficult work that I have ever attempted.

The deflected septum having been removed, both nostrils are packed with strips of gauze to secure coaptation and prevent bleeding. The packing of the operated side alone is not sufficient, as the removal of the

cartilage does not leave any firm surface to pack against. This is supplied by packing the unoperated side as well. Aside from the unpleasantness of a nasal hemorrhage, the blood may collect between the flaps, ballooning them out and causing bilateral nasal obstruction, which is slow to disappear. The danger of infection would be greater under these circumstances. The packing is removed from the unoperated side in twelve hours and from the operated side in twenty-four or thirty-six. If all denuded points and surfaces are protected with rubber tissue, the gauze does not adhere anywhere and its removal is not attended with pain or followed by bleeding. No subsequent dressing and very little treatment is needed.

The first objection that one would think of in this operation is the danger of having the nose sink in if much cartilage is removed. To avoid this a generous strip must be left along the bridge, and the integrity of the nose might then be likened to that of a ring, as compared to a solid disk, like the coin, which its normal state resembles. Unless very crudely done I would not fear sinking of the nose unless infection occurred. The tendency of a chondritis to persist till all the cartilage is destroyed would make a deformity very likely to follow infection.

As in much other surgery, circumstances will demand modified technique, and complications during and after the operation will tax the surgeon's resources, but as no one will attempt this operation from this meager description I will conclude with a demonstration on the model which I hope will make clear any points which the paper has failed to sufficiently explain.

(The steps of the operation were then demonstrated on a model.)

THE DUTY OF THE COUNTRY PHYSICIAN TO THE MOTHER AND CHILD.*

BY HOWARD C. CURTIS, M.D., ALGOOD, TENN.

One of the problems that confront us as country physicians is, "How shall we treat,

and instruct others to treat, and care for the infant?" Volume after volume has been written on infant feeding and the care of the new-born and the mother. Every phase of the question almost has been exhausted and still we continue in some of the old customs, habits and superstitions about the baby that our grandmothers taught years and years ago. The child is a very valuable asset to the home, and I believe deserves more attention than he sometimes receives. The physician is responsible for a large per cent of the diseases of infancy and childhood. I believe we do not take enough pains and care in instructing young mothers and older ones as well, how to care for their babies. One thing to be remembered most especially is that a large per cent of the mothers' information about her child will depend upon what her family doctor tells her. Most especially is this true in the rural districts, where they do not have the opportunity of reading magazines, journals and other periodicals along this line. From the wealth of information that has been accumulated concerning the complex problems of infant mortality, one fact stands forth more clearly than all others, and that is, that the actual progress of the immediate future in the conservation of child life will be largely, if not entirely, measured by the extent to which mothers can be taught to apply the principles of hygiene.

Milk bureaus and dispensaries may be established, mothers' clubs and societies organized, lectures given, books and articles printed galore, but all without the slightest avail, unless the mothers can be induced to practice not only occasionally, but regularly, day in and day out, the hygienic details that have been found so notably effective in preserving the health of children during the first few years of life. One of the greatest needs, therefore, confronting us as thinking men is how best to instruct the mothers. There is a belief that dispensaries, hospitals and medical men can in no way accomplish greater good than to direct their efforts toward educating mothers. The general practitioner has opportunities in this direction that no one else has, and I

* Read before Tennessee State Medical Association, April, 1911, Nashville, Tenn.

believe is in position to do more good and accomplish more than any one else.

Each mother should be told how to care for her baby, no matter what her circumstances or environments in life, the poorer and more unfortunate mother should have especial attention to help enable her to better care for her offspring.

These are some of the things that should be impressed upon them:

That she should, if possible, nurse her child, the proper care of the infant's eyes, his mouth and skin, that he should have a daily bath, that the clothing should be light and cool, he should have plenty of outdoor exercise, that he needs fresh water to drink instead of paregoric and laudanum. That he should have regular habits, and also that he should have regular hours to nurse. A good many other things as to his feeding, etc., should not be neglected.

The doctor will be called upon to decide as to the means of feeding, whether the child be fed breast milk, cow's milk, goat's milk, mixed food or artificial food. It is our duty to help the mother solve these problems, which sometimes are very difficult ones. It is our duty to inform them as to the many evils and deceptions that are being perpetrated on them. One of the evils is the so-called fooler, or pacifier. This thing is useless and injurious in the extreme, and we should forbid its use. The sucking causes a continuous flow of saliva at times when it is not needed to digest the food. When the saliva is needed to digest the food there is less than the necessary flow as a result. This state of affairs frequently causes indigestion. It also changes the shape of the gums and causes protruding teeth. It produces a change in the muscles that form the roof of the throat. It causes a flow of blood to these parts that is unnecessary, and sometimes causes adenoids to develop. Malnutrition, marasmus, indigestion, intestinal derangements, adenoids, tonsillitis, nervousness and a large per cent of other diseases could be avoided by a little care in instructing the mother.

Holt says that the children under one year of age furnish from 20 to 25 per cent

of all deaths in civilized countries. This being true, it seems that we could do no greater work for the betterment of humanity than to spend some time and give some attention in this direction to help lower the rate of mortality.

Every child and every mother is a law unto themselves, and they will have to be dealt with accordingly. No field of endeavor, philanthropic, charitable, sociologic or educational, offers the opportunities for such gratifying results as the training of the girls and women of our own country in motherhood and child hygiene. In other words, in teaching women that it is not enough to be a good mother, but that her mission calls for her to be an intelligent, well informed mother.

The success along this line will depend on us as country doctors, and the amount of information we impart to our patients.

DISCUSSION.

Dr. John A. Gaines, Nashville.—This paper is too important not to receive some discussion, and I expected gentlemen who confine themselves to the practice of medicine principally would undertake to discuss it. The care of the young child is one of the most important elements in the practice of medicine. The mortality in the infant up to the first or second year comprises the greatest mortality perhaps that we have, certainly except in extreme old age. As the doctor suggested, Holt's statistics give a mortality of twenty-five per cent in the civilized countries. This is an enormous death rate, and it is a death rate that can be very materially lowered. Many of these deaths are due to improper management of the cases to unhygienic surroundings, to improper care so far as cleanliness is concerned, and to improper understanding of the necessities for fresh air, the proper character of clothing, as well as the hygiene of the mouth. All of these things, as the doctor suggested, I think should be emphasized. I think his condemnation of the fooler is a very important step in this direction. It not only causes all the evils he suggested, producing a change in the form of the gums due to abnormal conditions, leading in later life to throat trouble, but it is a constant source of trouble. No matter how the fooler may be tied around a baby's neck, it is on the floor one minute and in the baby's mouth the next. It is a scavenger, and it is one of the most potent elements in producing the high mortality. Clothing is another important element. The average mother in the city makes a great mistake in thinking that she must dress a baby two or three days old in the regular costume of a lady in society, with all

character of starched goods, laces, and so forth, clothing that cannot be readily washed, that irritate and annoy the child, and we all know how susceptible the digestive organs in infancy are to any character of annoyance of fret or worry. The nervous system is so unstable that it effects other organs. This is an important feature to deal with as well as the daily bath which the doctor suggested. Of course, in the upper walks of life that is unnecessary to dwell on, but as I lived in the country and practiced there for a time, I know the suggestion he has made is not out of place. The daily bath is not usual with a certain class of people, and the doctor can correct that by private suggestion. The care of the breast, cleansing it properly before the baby goes to it, as well as the hygiene of the mouth, is an important factor. That is something rarely ever done among people of a high degree of intelligence.

Dr. S. S. Duggan, Eagleville.—I did not get in to hear all of the paper that was read, but what I have heard was good advice from our young brother practitioner. Like himself, I am from the rural district, and practice medicine in a little village of four hundred inhabitants, and I have to contend with the things he has mentioned in his paper, and my instruction to the mother is always that cleanliness is next to godliness. It is the only way that we can bring a child up, namely, to keep him perfectly clean, and as Dr. Gaines has truthfully said, the mother should be cleanly herself. I was very much impressed with the thought that our young brother presented, and while we can go back in our lives sometimes and reflect on what we have seen and done, we never get so old (unless we get too wise) that we cannot learn anything, and I have yet to see the man who knows all about the practice of medicine and the care of patients. I have been practicing medicine since 1884, and I have acquired quite a number of babies on my list, and I have had as little trouble with them as the average doctor. After they pass infancy and begin to crawl around and are being given all manner of food, I have come to the conclusion sometimes that the instruction I gave to the mother in regard to the nurture of the child and the way that it should be brought up has been a failure. Nevertheless, it is our duty as physicians to instruct the mother in the proper hygienic surroundings in which her child should be placed so as to be of benefit to it. I am glad that our young brother practitioner has read this excellent paper, and we would all do well to study it, and we need not be ashamed if we can profit by his advice and bring up children in the way they should be. We should be endowed with sufficient power and influence over the mother that our instructions may be adhered to.

Dr. Alfred Jones, Lewisburg.—I do not think there will be any more important subject brought before this association than the one we have to deal with in the cases of those who are young and tender. This subject should receive careful consideration at the hands

of the members present, and I think it is the duty of every physician who waits upon a woman, to give her instructions as to how the breast should be treated and managed, in order that cracks may be prevented, inflammation, abscess of the breast prevented, because when a woman has those conditions the young baby is found to be subjected to serious disadvantages.

There is nothing I think that brings about more trouble than giving the baby a fooler or rubber tube, a thing which should never be used. If you use anything at all, my experience has taught me to use a bottle and rubber nipple, which you can slip over and wash out thoroughly, can dry and clean the bottle, but where you have these tubes it is not an easy matter to disinfect them properly. The greatest trouble that has come in my life has been from feeding. I have practiced in small towns myself, also in the country, and the great trouble I have is in regulating the food, and that is something every doctor ought to understand and study thoroughly, namely, how to feed children. Let us take the summer complaints, and we will find that in nineteen cases out of twenty the trouble is the result of bad feeding and of imperfect digestion. The average mother will commence feeding a baby with solid food early. This ought never to be done until the child is advanced in age. If you take children with summer complaint and diet them properly, very little is needed in the way of medicine.

There is another important thing that I do not think has been mentioned, and that is, that the orifices or openings should all be examined. The practitioner should examine the prepuce to see whether or not it is in a normal condition, and also the anus to see whether it is open or not. You will find a great many of these little patients who cannot pass water freely on account of secretions and other things, and the orifice may be closed, so that there is great difficulty in passing water. The result is the urine is retained in the bladder, and the little patient is very much distressed and is subjected to serious inconvenience and danger. If we look more carefully and properly after the diet of these little fellows, I do not think we will have anywhere near the amount of trouble and fatal results that we usually have. They should have water, and not be allowed to nurse too much so as to overload their stomachs and produce colic. When these little patients have attacks of colic then come in the little remedies to relieve them, and the first thing they should receive is some of the anodynes. I think we should avoid giving them agents for the purpose of relieving their colicky pain, but direct our attention principally to the dietary.

Dr. H. C. Sanders, Adamsville.—I do not know as much about babies as I would like to know. I would like to know how to treat more successfully a three months' colic, and how to enable the mothers to sleep and keep these little ones from being thrashed. I am sure, there has not been a subject brought before this association which is more interesting than this one,

and there is just one point I want to mention in connection with what the author of the paper had to say about proper diet. He says very little about the amount of exercise they should have and of being in the open air. A strong, healthy baby may be kept from taking cold without danger of killing it, but a weakly, puny baby must have open air and sunshine. I believe it is the open air and sunshine they get which enable them to throw off that puny condition and become healthier and more robust. It is more important for these children to have a daily sun bath and fresh air baths than daily water baths, because they get fat without the water bath, but they do not get along very well without fresh air and sunshine.

Dr. F. J. Runyan, Clarksville.—There is one point I want to mention about the care of the breast. So many cases of acute mastitis are due to allowing the child to nurse an empty breast. When these children are allowed to nurse an empty breast it aggravates the already existing inflammation, or frequently produces it.

Dr. J. S. Campbell, Gordonsville.—I wish to commend the very excellent paper of Dr. Curtis. It deals intelligently with one of the most important subjects that could be brought before this association. I desire to emphasize one point mentioned, namely, the baby must be kept quiet. In the absence of a trained nurse, the physician should never fail to impress the family with the importance of allowing the baby to rest calmly, and not follow the old custom of making a show of it for every one who chances to visit there. Undue excitement often scares the baby and causes it to cry. In an attempt to calm, it is jolted and rocked in the old crib or rocking-chair. Failing in this, resort is had to soothing syrups or other opiates, which irreparably injure the nervous system and deranges the digestive organs.

Dr. Curtis (closing).—I desire to thank the gentlemen for their discussion of my paper. The intention of the paper was to call attention to the fact that members of the profession have been negligent in regard to some of the things that should be impressed upon the mothers. I dare say a good many city physicians are guilty and responsible for these very same things that happen to us country fellows.

SURGERY OF THE INTESTINES WITH REPORT OF SOME CASES.*

BY J. HUGH CARTER, M.D., MEMPHIS, TENN.

This is a subject which I believe will be of interest to all, especially that which pertains to gunshot and stab wounds, of which I will especially treat in this paper.

Every surgeon knows that the sooner one gets to a patient of this character much

better are the chances for recovery. Every patient should be operated upon as soon as possible without having been moved about or handled any more than is absolutely necessary, as each time the patient is moved greater will be the liability of infection from distributing the infectious material of the intestines. Therefore, every one should be so prepared as to do this class of work at any time, and I might say anywhere.

The cause of operations upon the intestines are most frequent for obstruction, which may be due to a band of adhesions causing a volvulus or diverticulum, appendicitis or strangulated hernia. Again, it may be due to some foreign body or to some growth upon the intestines, but, of course, gunshot and stab wounds, which I wish to speak of, especially.

I believe there are some rules by which we should be governed in operating upon the intestines:

First—We should, as far as possible, operate where the circulation is most perfect. There is more or less interfering with the blood supply when sutures or ligatures are applied to, or near the mesentery or omentum; especially, they should not be applied to the omentum near the colon for fear of gangrene from cutting off the blood supply.

Second—We should be careful to apply our sutures so as to bring the two layers of the mesentery together as the space between them is not covered by peritoneum, therefore has no blood supply and would die for want of nourishment.

In doing an end-to-end anastomosis of the small bowel, it is not best to bring the segment of the mesentery so as to be in apposition to each other, and, if possible, one should never operate upon a part of the intestine that is not covered by peritoneum, especially in anastomosis. Therefore, we are bound to, at times, do a side-to-side anastomosis, or an end-to-end anastomosis.

Third—The omentum can be of great service in furnishing a covering to raw places and nourishment in anastomotic work, which is very important, and again,

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there should be no tension if possible upon any part of the sutured intestine.

I do not believe one should ever wash or flush out the abdominal cavity with saline or any other fluid, it makes no difference how wide the infectious material may be distributed, but simply wipe out the abdominal cavity and the intestines with wet gauze sponges. Then I insert drainage, using rubber tubing, one side cut in circular manner with or without a small piece of gauze drawn through the tube. In most cases operations upon the intestines can be selective except in strangulation, punctures and gunshot wounds. Therefore, in former, we have time to prepare our patient for the ordeal, while in puncture or gunshot wound we must operate anywhere and any place, and, I might say, under all conditions.

In operation for puncture, I use the two suture method, fine No. 1 catgut for first suture, which passes through all coats of the bowel, and, second, a Lembert suture of fine silk or linen; this stitch only through the serous and muscular coats of the bowel.

In anastomotic work I rely upon the Connell suture method, or by the use of the Murphy button, according to the condition of the patient and what I find after having opened the abdomen. There are some disadvantages to be found in both of these methods, but more advantageous things to be said in their favor.

It is a rule with me to wash out the stomach before giving anesthetic if the patient is vomiting or very much nauseated at the time of the operation. This should be done also after the operation if patient should continue to vomit, or a very large dose of castor oil to be given just as soon as the patient can swallow after coming out from the anesthetic. This will remove all decomposed substances from the bowel and stop fermentation.

This rule I have followed for the past five years with most beautiful results. Therefore, I may say the after treatment is to put patient in bed flat on back with head raised from one to two feet. Normal saline, ounces 4 by bowel every four hours, strychnine

sulphate 1-40 grain and digitaline grains 1-100 hyperdermatically every three or four hours. Wash out stomach if patient is vomiting and administer from one to two ounces of castor oil. No food or water for first three days save water to wash out mouth and possibly a swallow occasionally. Morphine or codeine if much pain. With this I wish to report (to me) two most interesting cases:

Case No. 1.—A negro, age 22, single, of medium size, was shot from behind in lumbar region with 32-calibre pistol ball on the afternoon of August 5, 1910, about 5 p. m. This negro walked about one mile, when he had to sit down on the side of the road from weakness. Another negro was passing by in a wagon took him to the street car line and put him on the car, where he went to the police station, from which place he was sent to the hospital about 10 o'clock. Then I was called to see him.

Upon examining the negro I found the ball had entered from behind in the lumbar region about two inches from and to the left of spinal column and lodging just under the skin in front of the abdomen on a level and about two inches from and to the left of the umbilicus. There was considerable shock. However, the patient was put on the operating table, ether was administered and patient prepared for laparotomy, an incision was made along the left rectus muscle over the pistol ball into the abdominal cavity where abdominal viscera and intestines were examined.

The intestines were perforated eleven times. They were all closed as described above, in puncture wounds save one in the small intestines, which had been cut almost in two by the ball passing directly through the bowel. Therefore, I cut the bowel in two and did an anastomosis, using the Connell suture method. The abdominal cavity was thoroughly wiped out and the bowels cleaned with gauze sponges, drainage being inserted. The abdomen was closed in the usual way and the patient was treated as above described in after-treatment. The

patient left the hospital in three weeks perfectly well.

Case No. 2.—A negress, age 28, married has had no children, rather small in stature but very fleshy, was shot with a 38-calibre pistol ball about 5 o'clock in the afternoon of the 26th day of September, 1908, the ball entering the abdomen about two inches below the ensiform cartilage and about one inch to the left of the median line, passing through the margin of the left lobe of the liver, stomach in two places and cutting the small intestine in two about the junction of the duodenum and jejunum and making two other perforations in the small intestines, the ball lodging just under the skin about two inches from and on a level with the twelfth dorsal vertebrae to the left of the spine.

This patient was first seen by a negro doctor who carried her in a wagon to his office, where she remained without any attention until about 11:30 o'clock, when she was brought to the City Hospital, where I saw her about 12 o'clock.

The patient was immediately put on the table and prepared for an operation. Ether was administered, a median incision was made into the abdominal cavity beginning just below the ensiform cartilage and extending downward about four inches where the stomach was examined and found to be perforated in two places. These openings being closed as in previous case, next anastomosis of the small intestines was made by the use of the Murphy button and the perforation in the small intestines was closed, as was the stomach, using fine cat-gut ligature for the first, and silk for the second suture. A cigarette drain was inserted just below the stomach and one near where the button was used. The abdomen was closed in the usual way and patient sent to bed and treated as above outlined.

The drainage tubes being removed on the fourth day, the button passed on the fourteenth day without any trouble. Patient continued to improve and left the hospital one month from the day she entered.

To sum up:

1. One should make a selective operation

as far as possible in operating upon the intestines.

2. The stomach should be empty before the anaesthetic is given.

3. We should be sure the blood supply is not interfered with before inserting button or the Connell suture in anastomosis and the two layers of mesentery should be well brought together.

4. Do not wash or flush out abdominal cavity, but simply wipe out with gauze sponges.

5. After patient is in bed, keep stomach empty, and if nausea or vomiting, wash out stomach with saline by use of stomach tube or administer large dose of castor oil.

6. Where there is infection, use drainage.

DISCUSSION.

Dr. Cooper Holtzclaw, Chattanooga.—There is one point that I wish to call attention to, and that is early operation. Given an abdominal wound, shall we wait for symptoms? That is what practitioners usually do—wait until the patient is poisoned so thoroughly and completely that he has got only five chances out of a hundred to get well. In a penetrating wound of the intestine prompt operation is necessary, and as far as pushing in a probe is concerned, you might as well push the probe into a haystack to find a needle as to try to find a wound in the intestine. The only thing to do, as soon as you find a penetrating wound of the abdominal wall, is not to wait for symptoms, for in *ninety-five* per cent of the cases of penetrating wounds, if you get the patients and operate before *six hours*, you can save them, provided they have not bled too much. After six hours what do we find? We find that the bacillus coli communis gets into the abdominal cavity, is absorbed, and breeds there very rapidly. While the bacillus coli communis is the proper kind of friendly germ in its proper place, when it gets into the abdominal cavity and circulation it puts the patient in a condition in which he cannot stand the further shock of operation. So I want to emphasize the point, that when you have penetrating wounds of the abdomen, do not wait for symptoms, but open up as soon as you can get things ready. Eight or ten years ago it was considered a dangerous and formidable operation to open the abdomen for gunshot wound, but now with ordinary antiseptic precaution and the Murphy's button and the Connell and Czerney sutures, the abdomen can be opened with impunity, and intestinal wounds can be rapidly and effectively sutured.

Dr. S. R. Miller, Knoxville.—I do not want to say very much on the subject because the author of the

paper has covered it very well. I wish to take issue with him on two or three minor points. One is that he washes out the stomach before he does the operation. Where a man suspects a perforation of the stomach or of the intestine, but particularly of the stomach, I think we ought to avoid that procedure, because the patient may retch a great deal and force out a good deal of contents into the peritoneal cavity. I think it is all right to wash out the stomach after the wound has been closed as he suggests, but I think he will have a great deal less material to wipe out if he will wait until he closes the wound.

Another thing he speaks of is the use of ether as an anesthetic. Ether causes more nausea and vomiting than chloroform, as a rule, and for that reason I think these patients should be operated on early and chloroform used. It is my plan, when I operate on these cases early, to use chloroform instead of ether as the anesthetic.

The doctor speaks also in his paper of wiping out with gauze or sponge. I hope he does not use the old sea sponge. I take it that he means gauze as a sponge, and if he does mean that, all right. I take it for granted that he has not gone back to the old sea sponge with which he wipes out the peritoneal cavity.

Dr. Carter (closing).—I wish to thank the gentlemen for discussing my paper. In regard to what Dr. Holtzclaw said with reference to the Connell suture and the Murphy button, I had to be governed by the condition that I found at the time of the operation. Of course, there are some things we could discuss pro and con for a long time, but I think one's own judgment will dictate to him what he should do at the time, and judgment is the only thing on which we can rely in doing these operations. While the Connell suture is the ideal method, at the same time we can use a Murphy button as we did in one case, because I thought at the time it was best to do so.

With reference to what Dr. Miller said concerning the sponge, I meant to say in my paper that I use gauze as a sponge. The point I wanted to emphasize was not to flush out or wash out the abdominal cavity. I do not believe this should be done in any condition of this kind.

In regard to the anesthetic, I usually find that these patients are in more or less shock, and in shock chloroform is contraindicated. Under certain other conditions I would use chloroform, but as a rule, when we get these patients in more or less shock I think ether is the anesthetic to be used, so in that condition I wish to say that while I use in my work ether, in some cases, where we have the patient in good condition, I think chloroform is preferable.

THE PROBLEM OF LONGEVITY AS RELATED TO LIFE INSURANCE.*

BY JOS. W. JOHNSON, CHATTANOOGA, TENN.

Medical Director Volunteer State Life Insurance Company, Medical Director Interstate Life and Accident Insurance Company.

GENTLEMEN: Inasmuch as the subject assigned me goes to the very heart and life of the insurance business, I wish to say at the outset that I shall perhaps make frequent digressions from the subject, and if perchance I shall say anything that might be considered as being not altogether complimentary to the profession, beg to say that being one of you, you will, of course, understand that present company—including myself—is always excepted.

Life insurance is the direct outgrowth of the love of family and the desire to make provision for loved or dependent ones, which is common to all men, and its existence in crude form dates back to long before the Christian Era, both Greece and Rome having forms of mutual or fraternal orders that cared for sick and infirm members, etc. Interesting, and in a way instructive, as a review of this history might be, it in reality has no place in the discussion of the subject assigned, and I will pass from same by simply saying that life insurance of today, properly understood, is protection pure and simple, and that its basis is the value of a human life, which represents a man's present or prospective earning capacity, multiplied by his life expectancy.

It will therefore be seen, as stated in the outset, that the question of longevity goes to the very heart of the business, and that to insure men against the contingency of death demands that the laws governing mortality shall be thoroughly understood, and that influences leading to unusual or extreme fluctuations in such mortality must be absent or reduced to the minimum. One cannot even now, with any degree of certainty or safety, and under the most fav-

* Read before Chattanooga Academy of Medicine.

orable circumstances, predict the duration of life of an individual, but we can very accurately forecast the average of duration of life of a large group of men, and we do know that of a very large number of persons living in a certain year, a definite number will die during the following year, and that taking the same group and carrying it from year to year, we will find it gradually diminishing until the last survivor shall have fallen by the wayside.

In America the beginning of life insurance is seen in a still existent "Corporation for the Relief of Poor and Distressed Presbyterian Ministers," and from the very beginning American companies have worked almost wholly on the basis of selected lives—that is to say, they have not as a rule attempted to insure persons who were not in good health, or those whose family record, personal history, occupation or habits did not offer a reasonable ground for the belief that they would live to an old age; and without going into the question of the method of the construction of mortality tables, beg to say that for practical purposes, or for the purposes necessary in examining and making up the rating of a risk for insurance, life expectancy may be reduced to a very simple proposition, and in order to thoroughly ascertain the expectation of life one has simply to deduct the figures representing a man's age from 80, and two-thirds of the remainder will represent the number of years that he has to live—that is, his expectation of life will equal two-thirds of the difference between the applicant's age and 80. It is perhaps proper that I shall here explain that this method will be found very inaccurate when applied to older lives.

There is also another very amusing and extremely inaccurate agent's method of ascertaining the probable life-time of an elderly applicant, which is to add the ages at death of the deceased parents and grandparents and divide by six, the quotient representing the probable age which the particular individual will attain.

The older companies at one time operated without medical examinations, and simply

demanding that the applicant present a certificate of health and appearing before a lay board; and even now one may hear it said that selection by physicians is unnecessary, and that one might go into the street of any city and insure the passers-by with safety; and one may not infrequently meet an insurance agent who believes that he can size up an applicant quite as well as a physician. Such contention is, of course, utterly absurd and erroneous, and the very fact that the risks chosen under this proposition would be in the main active business men, residing in respectable parts of the city, would of itself argue a very good average of life; but to assume that this method of selection would prove favorable has little weight, and it is highly improbable that applicants voluntarily presenting themselves for insurance would be of an equally good class—for however well he may recognize its importance or know its value, the average man in good health looks much upon life insurance as the sinner under similar circumstances looks upon religion, and argues that he may well put the matter off until some more convenient season, even as the sinner defers the matter of seeking grace, while the sick or the infirm may, and, in fact, frequently do, go from the office of one insurance agent to that of another, seeking and hoping that they may through some error, sympathy or perhaps direct fraud obtain the protection to which they are not entitled, even as the infirm sinner rushes to the anxious seat and begs for the grace which he has before spurned, and for the benefit of which he has no right to hope, save the mercy of a Divine Providence.

I am, however, getting very, very far away from my subject, and wish now to take up some of the problems of the examiner, and a few, at least, of the things which tend to shorten longevity, or rather to discuss the risks which, grouped in classes, shall show a death rate according to the combined experience of American companies in excess of the average expectancy, and very much in excess of the average among selected lives.

Companies do not demand or expect

physical perfection, but they do demand average good health, and this average good health, be it understood, does not mean average death. They demand primarily longevity, and realize that this in a large group of men must depend upon race, morals, occupation, habits, environment, family history and physical condition, and excluding minor defects, the one specific and one vital question is, *how long will this man or woman live?* Just here permit me to say that the examiner should never permit himself to approve a doubtful risk upon the assumption that this one, though likely to fall short of old age, will be of no consequence in the vast number of better risks secured.

Taking up risks which as a class have proved unfavorable, I wish to say:

1. Is the large class coming under the heading of men who have reformed from intemperate habits and which, notwithstanding the extreme care which has been exercised in every selection, show extremely bad results for all ages at entry from 15 to 70, and for all ages of insurance, the combined rate being 299 actual deaths to each 238 expected, this notwithstanding the fact that lives of this class have never been accepted until after a period of several years' abstinence and apparent good health. The reason of this, which goes to the influence of alcohol upon the system, is too well understood by all of you to need, or to even here admit of discussion. One further reason is perhaps due to the fact that reformation is not infrequently brought about by the consciousness of the subject of some weakness or some impairment in his system, which does not as a matter of fact become apparent or noticeable for a number of years after the evil habit is left off, and which may in the interim be extremely difficult of detection, even by the most expert and experienced examiner or diagnostician.

2. Cases showing a history of gout exhibit results that are seriously disappointing, the mortality during the first five years of insurance being only slightly excessive,

but for later years almost double the expectancy, and equalling for ages at entry and all duration of insurance 168 actual deaths for each 108 expected.

3. Applicants showing a history of syphilis are equally as bad, showing for all ages and duration of insurance 397 actual deaths for each 297 expected—and just here I wish to say that specific disease is one of the most serious problems with which we have to deal, for notwithstanding its importance and its well known and well recognized evil influence and its marked effects upon the original subject as well as upon his offspring so far as longevity is concerned, the subject, perhaps often from shame or mortification rather than any desire to deceive, or accurate knowledge of its evil effects, seems to take for granted that it is a matter concerning which he is privileged to speak falsely; and the examiner, stepping behind the screen of professional privilege and duty of guarding professional secrets, finds it all too frequently unnecessary to go out of the way to furnish data, the signs of which are often evident and unmistakable.

The position of the examiner here is one of extreme delicacy, particularly in the case of a family physician, and while I would not for one moment be understood as advocating or as taking the position that he should betray professional confidence, where the facts are known, or where the evidence of disease is apparent, he should either place the company in possession of the facts, or by declining to make the examination place them in position where they can, through other sources, protect themselves; for while it perhaps has no bearing on the subject, since I have digressed this far, I wish to say here that regularly appointed medical examiners for a life insurance company are looked upon as officers of its medical department and as an important part and parcel of the institution and the one source upon which it is most dependent for safety and success, and no conscientious physician can afford to accept such trust without doing his very

best to live up to that which is expected of him, and in my experience of eight years in the business it is with pride that I can say in behalf of the profession of which I am one that where mistakes or failures of this kind are made—and, as above indicated, they are all too frequent—it is due more to a lack of the appreciation of what is expected than to any desire to shield the subject or to deceive the company.

4. Subjects giving a history of blood spitting have been decidedly unfavorable, the young entrants particularly showing decidedly unfavorable results. The combined expectancy for all ages at entry and duration of insurance show actual death of 814 for each 755 expected.

5. Dyspeptics have been only moderately bad risks, except young entrants of light weight, which have been decidedly unfavorable, showing a death rate of 61 actual deaths for each 48 expected, though for all classes of dyspeptics and for all ages of entrants and duration of insurance the actual deaths come barely within the margin of the expected.

6. Overweights—that is those weighing more than 20% in excess of the average, have been exceedingly unsatisfactory for practically all ages of entrants and duration of insurance, though very young entrants have shown fairly good results during the first five years of insurance. Combined experience for all ages at entry and all duration of insurance, however, has been 1060 actual deaths to each 898 expected. Entrants of this same class showing at least one parent as dying below 70, and those having a greater girth of abdomen than of chest expansion have been distinctly bad risks, and for all ages at entry above 28 overweights have been notably bad, and show a death rate only slightly less than 50% above the expectation.

7. Light weights who have had at least one parent dying below 70 of any kind of disease of the lungs have been unfavorable, particularly as to young entrants, though for all other classes, except those of dyspeptics heretofore referred to, they have proved uniformly good risks.

The limited time, or rather the limits which any one should put upon himself in papers of this kind forbids that I should do more than refer to a very few classes, and I have tried to select those that are met with most frequently; and you must bear in mind that what I have said in regard to the classes referred to deals exclusively with accepted lives that show no evidence of disease at the time of examination or acceptance.

In studying the question of longevity and in making up his rating of a risk, the examiner should always remember that the question is not one of present physical condition, but is a problem of longevity and of the man's chances of reaching the average age of a healthy man of the same age and class to which the subject belongs; and that this is a matter that can, and, in fact, is influenced by environment, habits, occupation, heredity, predisposition or apparent tendency towards certain diseases, etc., as much as by the present condition of the subject. In this connection the matter of first impression is of much importance and should never be lost sight of or overlooked.

All of us are familiar with the external signs of health or disease, and in examining for insurance must, to a large extent, depend upon our familiarity with such conditions, without the aid of any accurate case history, or, in other words, must not infrequently rely upon our eyes for necessary data and are forced to go back and apply diagnostic methods that flourished in centuries past and which have in modern schools been somewhat overlooked and neglected. Then, too, there is that peculiar class or type of case with which, I have no doubt, you are all familiar or have met, where, even upon the most rigid examination, you are unable to detect any actual weakness, or to by any method find evidence of disease and which you are still unable to get around or to rid yourself of the impression that the man is in some way abnormal or weak and that he is for some reason not possessed of the vitality or does not come up to the standard of the average man; and while unable to put your finger

on the trouble, or to get any definite explanation of the impression, you are yet positive in your own mind that he will not live to reach old age. Such impression should invariably be explained, for while a medical director has behind him the combined experience of all companies, and has many avenues and many sources from which he may get information that are not open to the examiner and from which the examiner can get no benefit at the time of examination, he does, in a very large class of subjects, have the advantage of the man who must make up his mind from the cold facts written out on paper, in that he has before him the living subject and the benefit of the impressions that come from contact.

In conclusion I wish to say that if I have been oftener off than on my subject it is due to the fact that I come not here to read a paper dealing with statistics and the scientific side of the subject assigned, but in a purely informal and friendly way to discuss the subject as it is applicable to life insurance and how as physicians and examiners we can best reach accurate conclusions and best benefit the companies that we chance to represent or serve. One very eminent physician, both because of his ex-

perience and his success, sums the matter up by saying that "What I desire always to impress upon examiners is the importance of a clear, full and accurate statement of all the facts pertaining to the applicant's insurability, not only with regard to the information required by the form, but with regard to many others which may come within his knowledge."

Some examiners seem to apply a magnifying glass to every trifle, while others fail to recognize the real importance of seeming non-essentials, and he who can avoid both dangers will never lack appreciation. This can be attained only by a careful study of insurance requirements, combined with a thorough professional knowledge and good hard common sense. Nearly every dollar of the great liability of insurance companies represents the opinion of members of the medical profession, and herein lies the responsibility of the examiner. If he does his duty, the company, if properly organized, is safe; and if he fails in same, he can but wreck the institution which he has been selected to represent, and whose interests and welfare he has promised to promote and conserve to the best of his ability.

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EDITORIALS**GALLOWAY MEMORIAL HOSPITAL.**

Nashville has for many years been a medical center, both in the sense that it offers medical education for the youth of the entire South, and also that it has had a group of able physicians and surgeons under whose care patients from a large territory are placed for more thorough diagnosis and treatment. We are at the present time, better fitted to offer educational advantages than ever before, and all that now stands in the way of the most efficient teaching is the help offered by the charity wards of a modern hospital; and it may be emphasized that charity hospitals not run in connection with medical training are usually conducted on an unsatisfactory basis, both with reference to the patients themselves and the physicians in charge. The stimulus afforded by the system of training the next generation of physicians invariably secures the best for those who are too poor to have their own doctor.

But apart from furnishing a real charity and with it facilities for teaching students of medicine Nashville needs facilities for perpetuating her eminence as the home of able physicians and surgeons. She needs means of furnishing, to the poor and rich alike, the most modern helps to diagnosis and treatment, such helps as cannot be secured in small communities. The only thing needed to meet this want is a well equipped hospital, and a well equipped hospital is not simply one with good plumbing, good heating plant, plenty of space and light, clean beds, good nursing and similar necessities. A modern hospital is of necessity an institution of investigation. The physician of to-day must, in a large per cent of his cases, go beyond the old-time methods of

taking a history and making a thorough physical examination; he must have constant recourse to examinations of blood, sputum, various discharges of the body, and the exudates of disease. Many of our commonest diseases may be so unusual in their course that positive diagnosis can only be made by the aid of blood cultures, inoculations, and similar scientific investigation. This is true of such well known diseases as malaria, typhoid fever and tuberculosis. The need of a definite diagnosis in such cases may be imperative so as to avoid unwise or possibly dangerous treatment.

In our present hospital equipment in Nashville these aids are difficult to secure and always expensive. A physician may frequently apply to several different sources in different parts of the city for the help that he needs. No hospital in our city, and of course no private office, is fitted up for all the chemical, bacteriological and X-ray work that may be required. Our present system is an economic waste. We need a hospital to which a patient could be sent and all necessary tests be made in the least possible time and at the least possible expense. Many of the aids are now neglected in individual cases, and the patient is not examined as carefully as he should be. As in a great many other phases of life advantages that are secured only by delay and effort are apt to be neglected.

The benefits to be derived from such equipment as I have spoken of should be the leading feature of the Galloway Memorial Hospital; it should not be known as the hospital that Dr. A visits or at which Dr. B operates, but as one at which no matter who has charge of the patient the full scientific facilities of the institution are available. Furthermore, physicians who may be at present a little backward about insisting on bacteriological and other tests, would soon learn their value and avail themselves of every help the hospital afforded. Nothing spurs the average practitioner to keeping abreast with the times so much as association with a progressive hospital. To the extent that the mass of a local or general profession is stimulated by these advan-

tages, to that extent is the public benefited, for whatever the medical profession learns is turned at once to the benefit of the community. The public is vitally interested in training physicians and keeping them fully alive to all improvements in their profession. Where there is a hospital with these departments of investigation properly equipped, the spirit of collaboration follows that makes for the success of the institution as a whole. It becomes known abroad as a place where courteous professional relations, as well as the investigative spirit, prevails—a place where diseases of doubtful and obscure origin may be worked out and appropriate treatment instituted. It matters little who, of a large number of physicians, attends a patient in such surroundings. The institution becomes known as one that appeals to, and is patronized only by, the best class of physicians.

Let the public see to it that the Galloway Memorial Hospital has such an equipment, that its medical and surgical services are established on a liberal basis, and Nashville will soon be better known as the place where the best can be had. Our people do not hesitate to go to the Johns Hopkins Hospital at Baltimore for diagnosis and treatment, though few could name any of the physicians or surgeons at that great institution. They go because it is known all over the country that that hospital stands for the best, and many, many thousands of dollars go to Baltimore every year simply because of such a reputation. The Hopkins Hospital is an asset of great value to that city, and the Galloway Memorial Hospital can be a similar asset to Nashville. This is the natural center to which patients from a large territory—Tennessee, Kentucky, Alabama and other states, would naturally come for a more thorough study of their conditions than can possibly be secured in their own communities. The money they bring is spent here and, from a purely business standpoint a hospital conducted on these lines would be a paying investment.

I hope we shall see the day when the Galloway Memorial Hospital in Nashville shall

be a source of pride not only to our profession but to this community, and shall be to our section a center of service and stimulation such as the Massachusetts General Hospital is to New England and the Johns Hopkins Hospital is to an even larger territory.

W. H. WITT.

"THE LAYMAN'S VIEW OF MEDICAL DISCUSSION."

The following, taken from the Nashville Democrat of Wednesday, October 25, is a fair report of how the public see us:

INABILITY OF PHYSICIANS TO AGREE ON ANY SUBJECT.

Feature of Meeting of Davidson County Academy of Medicine—Interesting Discussion.

Interesting discussion took place following the reading of a paper on "Chronic Indigestion" by Dr. L. E. Burch at the meeting of the Davidson County Medical Association held last night in the assembly rooms of the Tulane.

Dr. Burch was followed by Dr. J. A. Witherspoon, after which a general discussion took place. These meetings are held weekly, and such matters as occur in the practice of these physicians that are of general interest are brought up for discussion. The experiences related at these meetings are especially beneficial to the younger practitioners. The feature of last night's meeting was the inability of any two physicians out of a possible fifty to agree upon any subject.

At this particular meeting of the Nashville Academy of Medicine, harmony prevailed, there was no disagreement between surgeon and internist as to the proper diagnosis, treatment or prognosis of these or other conditions which were discussed, but the public are informed that *the feature* of last night's meeting was the inability of any two physicians out of possibly fifty to agree upon *any* subject. We simply quote the above to substantiate a belief we have long cherished, that the lay press are wholly incapable of correctly interpreting medical matters, and should be censored by medical men.

We are pleased to note that the public press are at last beginning to realize the importance of education upon matters re-

lating to health and to see so many instances in which health departments are being opened up. The Chicago Tribune, with its health department so ably edited by Doctor W. A. Evans, was a leader in this field, and those who know him, know how capably this department will be edited. The Nashville Democrat has recently opened a similar department with Doctor W. E. Hibbett, Health Officer, of Nashville, as its editor. Doctor Hibbett's standing and experience will also be a guarantee of the correctness and value of the information given.

The profession has remained in the background entirely too long. Education upon matters of public health, especially toward its prevention and guarding against infection, sanitary measures, hygiene, diet, etc., are important ones, and the proper source of information should be through the profession. We are pleased to see the daily papers of this country establishing such departments and placing at their heads competent and capable physicians.

DEATHS

Dr. W. N. Enochs, one of Huntingdon's leading physicians, died October 14, after an illness of ten days. He was 43 years of age, a graduate of the University of Tennessee and also of Vanderbilt University. He was at the time of his death County Health Officer, a position he has capably filled for many years. He was a Templar and a Scottish Rite Mason of the Valley of Memphis.

A widow and two sons survive him.

NEWS NOTES AND COMMENT

The Memphis Board of Health have issued an order that all employees of the health department, under the age of forty-five years, who have never had typhoid fever, must be vaccinated. All those who have had typhoid would be considered immunes and the order would not apply to them. The department is strongly advocating the use of anti-typhoid vaccination and has distri-

buted gratis hundreds of doses. They are, however, only enforcing its use to the employees of the health department.

The Mississippi Valley Medical Association met in Nashville, October 17-19. The program of the scientific sections of this meeting was published in our October number.

The profession of Nashville entertained them with a reception to the President, Doctor Babcock, at the Hermitage Hotel, on the evening of the 17th, with an elaborate smoker and vaudeville entertainment on the 18th, and an automobile trip to Andrew Jackson's old home, The Hermitage, on the afternoon of the 19th.

The meeting was a successful one, though the attendance was somewhat short of that expected. The papers read were all of a high order, and the discussions elaborate and full.

The Association adjourned to meet in Chicago, after the election of Dr. Louis Frank, of Louisville, President; Dr. Albert E. Sterne, of Indianapolis, Vice President; Dr. H. E. Tuley, of Louisville, Secretary; and Dr. S. C. Stanton, of Chicago, Treasurer.

A party of Chicago philanthropists, headed by Mr. Julius Rosenwald, recently paid Nashville a visit, and left a substantial remembrance to the Hubbard Hospital in the shape of a check for \$1,000, which is to be used in the completion of the hospital.

This institution is a colored hospital in connection with the Medical Department of the Meharry College, and is doing untold good in the alleviation of suffering among the poorer members of the colored race.

Members of the Southern Medical Association who expect to attend the meeting of the Southern Medical Association at Hattiesburg, November 14th to 16th, should purchase a round trip ticket to Gulfport, either by way of Meridian, Miss., and Hattiesburg, or by way of Jackson, Miss., and Hattiesburg. The holder of such ticket will not be compelled to go to Gulfport, but

can return home from Hattiesburg on return part of his ticket. By purchasing this ticket one is certain to save a few dollars, whereas if he buys a straight ticket, and there should not be a sufficient number at the meeting to secure the one-third return rate, he would have to pay full price for a return ticket. The Gulfport round trip ticket can be procured at the coupon railroad offices in this state. It is to be hoped that there will be a large number from Tennessee to Hattiesburg meeting, which gives promise to be a very pleasant and profitable meeting.

The foundation is being laid for the \$50,000 addition to the Nashville City Hospital. The new addition will be in the form of an ell, running from the eastern end of the building towards the south, facing the Cumberland river. The wing will be two stories high, with a basement that will give it the appearance of a three story building. It will be ninety-six feet long and forty-five feet wide, the architecture being uniform with the remainder of the building. The basement will contain the laundry, kitchen, cold storage room, general storage room, pantry, servants' dining room, etc. On the first floor there will be located a beautiful sun parlor, which, in case of emergency, may be converted into a ward. Two men's wards and one boy's ward, each containing five beds, two bath rooms, and a diet kitchen, complete this floor. The second floor will be similarly arranged for female patients, and the babies ward, together with space for the superintendent's library. This will be a great improvement to the City Hospital, and the Superintendent, Dr. Wm. McCabe, together with the Board of Hospital Commissioners, are to be congratulated upon securing for Nashville this much needed addition.

The Adjutant General of the state recently authorized Surgeon General James H. McCall, of Huntingdon, to organize a field hospital of 108 beds, and an ambulance company. These will be a part of the National Guard of Tennessee, and will be organized

to conform to the regulations of the regular army. The headquarters of the field hospital will be in Eastern and Middle Tennessee, while the headquarters of the ambulance company will be in Huntingdon. Two officers and fifty-four men will be required to complete the personnel of the company. Twelve ambulances, three escort wagons, uniforms for the men, and other equipment are furnished by the United States Government.

Dr. M. M. Wagner, of Chattanooga, had his automobile almost completely demolished recently near Tyner, Tenn. The doctor escaped unhurt. He was run down by a freight train which was backing across a public crossing.

We are pleased to learn that Dr. Green, of Springfield, Tenn., who recently suffered a fracture of the tibia and fibula by being thrown from his buggy, is well on the road to recovery.

Dr. Jos. W. Johnson, of Chattanooga, is receiving congratulations upon the advent, October 12, of a son, who will be named H. Clay Evans Johnson.

Dr. Wm. Bowen, President of the Knox County Society, was operated upon for acute gangrenous appendicitis on the 12th of October. We are pleased to report the doctor entirely well again.

SOCIETY PROCEEDINGS

CHATTANOOGA ACADEMY OF MEDICINE.

One of the best meetings ever held by the local Medical Society was that of October 20. The local society took advantage of the presence of so many eminent men at the Nashville meeting of the Mississippi Valley Medical Association and extended invitations, with the results shown below. The Chattanooga society prepared attractive notices of the meeting and gave them a liberal distribution. Coupled with newspaper

items calculated to arouse interest, there resulted a large attendance. A more attentive and deeply interested audience has seldom been observed. The roll-call, reading of the minutes and reports of cases were dispensed with to conserve the time for the visiting physicians in attendance.

The following Chattanooga physicians were present: J. S. Dye, J. L. Goodwin, E. B. Wise, R. M. Colmore, G. P. Haymore, C. G. Graham, F. B. Stapp, W. G. Bogart, A. W. Boyd, E. E. Reisman, E. D. Newell, J. B. Haskins, B. S. Wert, J. M. Hogshead, S. I. Yarnell, H. L. Fancher, S. A. Fowler, B. Sullivan, W. F. McManus, B. F. Travis, J. C. Brooks, J. E. Green, V. Gibbs, F. T. Smith, C. A. Cobleigh, W. E. Anderson, J. B. Steele, H. B. Wilson, E. T. Newell, J. W. Horton, J. M. Selden, J. W. Macquillan, M. M. Wagner, E. B. Anderson, L. B. McWhorter, W. H. Cheney, W. A. Banks, E. C. Johnston, Carl Martin, J. J. Gee, J. A. Gentry, R. H. Tatum, R. M. Richardson, W. T. Hope, J. H. Taylor, M. A. Meacham, Raymond Wallace, A. W. Hilliard, J. S. B. Woolford, C. Holtzclaw, G. V. Williams, T. E. Abernathy, J. H. Atlee, H. P. Larimore, J. L. Atlee, Daniel Williams and Thomas Slayden.

Suburban physicians present were: C. H. Gurney, of Rossville; O. L. Blackwell, of Whorley; T. J. Ziegler and E. H. Byrd, of East Chattanooga; Y. L. Abernathy, of Hill City; L. T. Stem and J. N. Broyles, of East Lake; A. A. Nefe, of Lookout Mountain, and C. G. Cates, of St. Elmo.

Prominent out-of-town physicians present were: Dr. Willis F. Westmoreland, of Atlanta; Dr. Isaac A. Abt, of Chicago; Dr. L. A. Greenfelder, of Chicago; Dr. Tom A. Williams, of Washington, and Dr. Charles N. Smith, of Dayton, O.

Added to the above were present many wives of doctors, nurses, dentists, laymen and others interested in child study and teaching—a total attendance of ninety-five. President James H. Atlee presided.

Dr. Willis F. Westmoreland, Professor of Surgery at the Atlanta College of P. and S., read a most interesting and carefully prepared essay entitled "Technique and Post-

Operative Treatment in Some Abdominal Operations." Subject discussed in detail by Drs. L. A. Greenfelder, of Chicago; Chas. N. Smith, of Dayton, O.; C. Holtzclaw, E. B. Anderson, J. S. Dye, E. T. Newell and E. E. Reisman, and closed by Dr. Westmoreland. Dr. Isaac A. Abt, of Rush Medical College, Chicago, followed with a most interesting, thorough and valuable contribution entitled "Nervous Children." Dr. Tom A. Williams, of Washington, D. C., discussed this subject, but, due to the lateness of the hour, no further discussion was undertaken. Dr. Abt's essay was abstracted for the local newspapers. A rising vote of thanks was extended to the visiting physicians. Automobiles being in waiting, all then repaired to the residence of Dr. James H. Atlee, where a reception was tendered. Salads and ices were served.

The society adjourned.

H. P. LARIMORE, *Secretary*.

KNOX COUNTY.

The Knox County Medical Society met in regular session Tuesday evening, October 17, at 8 o'clock, Vice President Dr. W. S. Austin presiding.

There were seventeen members present at the meeting, and a number of important subjects were discussed.

Dr. C. E. Ristine, the essayist for the evening, read a most excellent paper upon the subject of "Cystitis in the Female." Dr. Ristine's paper upon this occasion, as usual, was a classic upon the subject and very much enjoyed by all present.

The discussion was opened by Dr. Chalmers Deadrick, who gave the society the benefit of his extensive experience in the treatment of this condition. The discussion was participated in by most of the members present.

Dr. M. M. Copenhaver will read a paper at the next meeting, which will be Tuesday evening, the 24th, upon the subject of "Treatment of Typhoid Fever in the Home."

We wish to note the fact that our President, Dr. Wm. Bowen, is now confined at

the Lincoln Memorial Hospital, where he underwent an operation for acute gangrenous appendicitis the 12th of this month. His friends were very anxious about him for a few days, but we are glad to report him convalescent and begging for beefsteak. He says that he is going to write a paper upon the after-treatment of surgical cases when he gets well. He thinks he will be a competent witness after he gets through with his experiences with his own case.

The society, at the meeting Tuesday evening, passed a resolution authorizing the Secretary to convey to him a message of condolence and the regrets of the society for his affliction.

We feel that we have one of the best societies in the State. We have a membership of about ninety and an average attendance this year of about twenty. We have recently changed our meeting night from Thursday to Tuesday; have also changed the place of meeting from the Hotel Imperial to the chapel of St. John's Church.

Quite a number of the members of our society attended the meeting of the East Tennessee Medical Society at Morristown last week. The distance from here to Morristown is forty-two miles, with a splendid pike all the way. Most of those going from here made the trip in automobiles. The trip was a most delightful one, the roads good and the country beautiful. Dr. W. H. L. White won in the speed contest, he making the distance in two hours, and by moonlight at that. He said that he killed two rabbits and a screech owl on his way back, and those with him said they were thankful to get home alive themselves.

The meeting of the East Tennessee Society was the most successful one in the history of the organization. There were about sixty or seventy of the leading physicians of East Tennessee present. There were thirty-seven papers upon the programme, so that there was no spare time left on our hands.

The physicians of Morristown gave us a royal good time. They treated us so well that we are thinking of making that the

place of permanent meeting for upper East Tennessee. After the night session they gave a banquet, at which were seated about fifty physicians and one preacher. Guess he thought he had gotten into the wrong pew that time. However, we enjoyed his presence to the fullest extent.

Dr. D. E. Shields was toastmaster for the occasion, and right royally did he perform the function. He gave us to understand that it would be a hard proposition to feed the crowd, for the reason that a Methodist conference had just adjourned a week's session, and that we knew their capacity for eating.

However, a Methodist conference could not exhaust the chicken supply in Morristown, as it is the largest poultry market in the South; so we did ample justice to the "milk-fed" chickens that this city is so famous for.

The profession in Knoxville is now pulling together for the good of the Knox County Medical Society and for scientific medicine. A spirit of good fellowship prevails, and very little wrangling over professional matters is indulged in at our meetings. There has not been a charge brought against a member of our society in more than three years, and knocking each other is a thing of the past.

We are, however, sorry to say that some of our best men have about ceased their society work. Hope, however, that they will soon "get religion" and come back again.

We have about decided to not elect any more of our members to the presidency of any society, for electing a man to that office is about equal to giving him a "withdrawal card." This is "strange, but true."

If our ex-Presidents don't get a move on them and come back soon, we are going to make them treat the society to a "swell" dinner the first of the year.

L. SHEDDAN, *Secretary*.

SMITH COUNTY.

The Smith County Medical Society met in regular session in the court-house in Carthage, Tenn., October 7, 1911, with the

following members present: R. E. Key, J. J. Beasley, M. N. Alexander, C. H. Donoho, I. H. Beasley, F. Swope, J. H. Chism, A. H. King, J. S. Campbell, R. W. King, C. D. Robbins, Jo G. Bridges, W. M. Crockett and B. J. High.

Drs. Perry Bromberg and Murry Tate, of Nashville, were present, and the privilege of the floor was extended them.

The minutes of September were read and approved.

There was an interesting clinical case presented by Dr. M. N. Alexander that elicited much discussion, and the consensus of opinion was that it was a case of pellagra.

A clinic, a boy 18 years old, was brought before the society for examination, after which the society was a unit as to diagnosis—tuberculosis of the hip joint.

Dr. J. J. Beasley read a paper, subject, "Osteo-Myelitis," and Dr. J. S. Campbell opened the discussion. A general discussion followed, which proved to be very interesting and instructive. Dr. Beasley closed the discussion.

Dr. Perry Bromberg read a paper, subject, "The Operative Treatment of Acute Epididymitis."

It was a most excellent essay, elaborate, comprehensive and instructive. It was a rare treat and highly appreciated by all present.

B. J. HIGH, *Secretary-Treasurer*.

EAST TENNESSEE MEDICAL ASSOCIATION.

The East Tennessee Medical Association met at Morristown, October 12 to 15, with one of the largest attendances in the history of the Society. Fifty-six physicians from various parts of East Tennessee being registered.

This is the oldest local society in the state, having been organized at Morristown in 1887.

Quite a number of Knoxville physicians drove through in automobiles, enjoying the excellent pikes and beautiful country of Jefferson and Hamblin Counties. Among the party were Drs. S. M. Miller, White,

Sheddan, Austin, C. B. Jones, Rule, Car-Michael, S. R. Miller, Lynn, Copenhaver, Zemp, Hodge, McCampbell, Bull, Christenberry, Acuff, Potter, and the writer.

Leaving Knoxville just after breakfast, and arriving at the beautiful and prosperous little city of Morristown about ten o'clock.

After the opening exercises, in which a hearty welcome was extended to the doctors, and all the wealth of the fertile country put at their disposal, we were told that this was perhaps the largest chicken market in the South. Also that the Holston Conference of Methodist Ministers had just closed a largely attended convention at this place, but that there was still abundance of the unparalleled Tennessee spring chicken for us, the present guests, and we were subsequently convinced that they knew whereof they spoke, for we were entertained with rare hospitality.

After the business session of Thursday a banquet was served at the Palace Hotel, from 10:00 to 12:00 p. m. Dr. Shields, of Morristown, acting as toastmaster. There was much wit and humor found among those present, some proving themselves to be adept after-dinner speakers.

On Friday the program was resumed, and finished about noon.

At this meeting the lower East Tennessee Medical Society was consolidated with the East Tennessee Medical Society. The officers of the lower being retained, as they were elected at Athens in May, with one exception, the Secretary and Treasurer. The name of the Society shall continue to be the East Tennessee Medical Association, and will meet semi-annually. Once in lower East Tennessee and once in upper.

The next meeting being at Cleveland in May. The object of this consolidation being to bring in closer contact and affiliation the profession of the upper and lower sections. The officers are as follows: Gus Shipley, Athens, President; T. C. Speck, Cleveland, Vice-President; G. C. Davis, Sweetwater, Vice-President; W. E. Howell, Morristown, Vice-President; O. W. Hill, Knoxville, Secretary and Treasurer.

O. W. HILL, *Secretary*.

THE STORM BINDER AND ABDOMINAL SUPPORTER.

The problem of securing a proper and efficient abdominal support during pregnancy and after confinement, as well as after laparotomies, is an important one, and has in recent years been extended considerably, since the importance of relieving all varieties of enteroptosis by mechanical support has been realized. The treatment of enteroptosis, of floating kidney, and even of cholelithiasis (according to Achilles Rose) by a well-fitting abdominal support has been successful in a large number of cases. It is, however, indispensable that the support should not only be properly adjusted and should hold the prolapsed viscera in place, but it must also be free from discomfort; it must be washable, durable in quality and moderate in price.

All these requirements are unusually well met in the Binder and Abdominal Supporter made in many varieties and for all conceivable purposes by Katherine L. Storm, M. D., 1612 Diamond Street, Philadelphia, Pa., who has made a remarkably successful study of the problem and has solved it to the complete satisfaction not only of the physicians and surgeons ordering the "Storm Binders," but also of their patients, which, after all, is the important point. Better write to Dr. Storm, Doctor, and find out about her binders for that neurasthenic patient of yours whose abdominal walls are relaxed and permit the viscera to drag down.—*Reprinted from the American Journal of Clinical Medicine*, July, 1911.

IMPORTANT NEW PREPARATIONS OF PARKE, DAVIS & CO.

General practitioners will be interested in the announcement by Parke, Davis & Co. of two new products of their chemical laboratories. Proposote and Stearosan are the names chosen to designate the preparations in question.

Proposote is creosote in combination with phenyl-propionic acid. It is a straw-colored, oily liquid, neutral in reaction,

nearly odorless, and having a slightly bitter taste suggestive of creosote. It is insoluble in water, but is slowly decomposed by alkaline liquids. The indications for it are the same as those for creosote. Tubercular cough following pneumonia, the cough of pulmonary tuberculosis, acute and chronic bronchitis, purulent bronchitis, abscess of the lung, asthma, and bronchitis complicated with Bright's disease are among the pathological conditions benefited by its administration. Being insoluble in acid media, it passes through the stomach unaltered by the gastric juice, to be slowly broken up by the alkaline fluids of the small intestines, hence may be given in gradually increasing doses until the desired effect is obtained. During prolonged administration, as is well known, creosote disturbs digestion, impairs the appetite, and often causes nausea and vomiting. Proposote is free from this objection.

Stearosan is santalol combined with stearic acid. It is an odorless, tasteless, light-yellow oily liquid that is insoluble in water and dilute acids, but is slowly broken up by alkaline fluids. The pathological conditions in which it may be employed with advantage are precisely those in which santal oil has long been used—chronic gonorrhea, cystitis, urethritis, vaginitis, pulmonary disorders such as chronic bronchitis, bronchorrhea, etc. It possesses therapeutic properties fully equal to those of santal oil, over which it has the important advantage of being practically without irritating effect upon the stomach. The explanation of the latter fact is that the preparation is not attacked by the acid gastric juice, but passes into the small intestine, where it is broken up or emulsified by the alkaline fluid and absorbed without difficulty. The distressing eructations and loss of appetite attendant upon the administration of santal oil do not occur when Stearosan is given.

Both Proposote and Stearosan were thoroughly tested clinically before being offered to the medical profession, and practitioners may be assured of their therapeutic efficacy in all cases in which they are indicated.

They are supplied in 10-minim elastic gelatin globules, boxes of 25 and 100, and may be obtained through retail druggists generally.

BOOKS RECEIVED.

THE PRACTICAL MEDICINE SERIES. PEDIATRICS, Volume VII. Edited by Isaac A. Abt, M.D., with the collaboration of May Michael, M.D. Orthopedic Surgery. Edited by John Ridlon, A.M., M.D., with the collaboration of Charles A. Parker, M.D. Series 1911. Price, \$1.25 per volume, or ten series for \$10.00. The Year Book Publishing Co., Chicago.

LIPPINCOTT'S NEW MEDICAL DICTIONARY. Edited by Henry W. Cattell, A.M. (Laf.), M.D. (U. of P.), Editor of International Clinics, Fellow of the College of Physicians of Philadelphia, etc. Freely illustrated with figures in the text. Price, \$5.00. J. B. Lippincott Company, Philadelphia and London.

INTERNATIONAL CLINICS. A quarterly of illustrated clinical lectures and especially prepared original articles on treatment, medicine, surgery, neurology, pediatrics, obstetrics, gynecology, orthopedics, pathology, dermatology, ophthalmology, otology, rhinology, laryngology, hygiene, and other topics of interest to students and practitioners. By leading members of the medical profession throughout the world. Edited by Henry W. Cattell, A.M., M.D., Philadelphia, with collaboration of Wm. Osler, M.D., Jno. H. Musser, M.D., A. McPhedran, M.D., Frank Billings, M.D., Chas. H. Mayo, M.D., Thos. H. Rotch, M.D., Jno. G. Clark, M.D., Jas. J. Walsh, M.D., J. W. Ballantyne, M.D., John Harrold, M.D., Richard Kretz, M.D. Volume III. Twenty-first Series, 1911. J. B. Lippincott Company, Philadelphia and London.

A TEXT-BOOK OF THE PRACTICE OF MEDICINE. The New (10th) Edition, Revised. By James M. Anders, M.D., Ph.D., LL.D., Professor of the Theory and Practice of Medicine and of Clinical Medicine, Medico-Chirurgical College, Philadelphia. Tenth Revised Edition. Octavo of 1328 pages, fully illustrated. Philadelphia and London: W. B. Saunders Company, 1911. Cloth, \$5.50 net; half morocco, \$7.00 net.

A TEXT-BOOK OF PHYSIOLOGY. The New (4th) Edition Revised. For medical students and physicians. By William H. Howell, Ph.D., M.D., Professor of Physiology, Johns Hopkins University, Baltimore. Fourth Edition, Revised. Octavo of 1018 pages, fully illustrated. Philadelphia and London: W. B. Saunders Company, 1911. Cloth, \$4.00 net; half morocco, \$5.50 net.

DORLAND'S AMERICAN ILLUSTRATED MEDICAL DICTIONARY. The New (6th) Edition Revised. A new and complete dictionary of terms used in Medicine, Surgery, Dentistry, Pharmacy, Chemistry, Veterinary Medicine, Nursing, Biology, and kindred branches; with new and elaborate tables. Sixth Revised Edition. Edited by W. A. Newman Dorland, M.D. Large octavo of 986 pages, with 323 illustrations, 119 in colors. Containing over 7,000 more terms than the previous edition. Philadelphia and London: W. B. Saunders Company, 1911. Flexible leather, \$4.50 net; thumb indexed, \$5.00 net.

VETERINARY BACTERIOLOGY. By Robert E. Buchanan, Ph.D., Professor of Bacteriology in the Iowa State College of Agriculture and Mechanic Arts, Di-

vision of Veterinary Medicine. Octavo of 516 pages, with 214 illustrations. Philadelphia and London: W. B. Saunders Company, 1911. Cloth, \$3.00.

COLLECTED PAPERS BY THE STAFF OF ST. MARY'S HOSPITAL (Mayo Clinic) FOR 1910. Octavo of 633 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1911. Cloth, \$5.50 net.

ANATOMY. A Manual for Students and Practitioners. By John F. Little, M.D., of the Jefferson Medical College, Philadelphia. New (2d) edition, enlarged and thoroughly revised. 12mo, 491 pages, with 75 engravings. Double number. Cloth, \$1.50 net. The Medical Epitome Series. Lea & Febiger, Publishers, Philadelphia and New York, 1911.

Ophthalmic Myology. A Systematic Treatise on the Ocular Muscles. By G. C. Savage, M.D., Professor of Ophthalmology (Defects of the Eye) in the Medical Department of Vanderbilt University, author of "New Truths in Ophthalmology" and "Ophthalmic Neuro-Myology," ex-President of the Nashville Academy of Medicine, ex-President of the Tennessee State Medical Association, ex-President of the Southern Medical Association. Eighty-four illustrative cuts and six plates. Second edition. Published by the author, 137 Eighth Avenue, North, Nashville, Tenn. Printed by McQuiddy Printing Company of Nashville, Tenn.

STATE MEMBERSHIP LIST

THE TENNESSEE STATE MEDICAL ASSOCIATION.

A complete list of those who have paid Association dues for 1911 will be published in this and occasionally in succeeding numbers of the Journal. The list published below includes only those whose dues were received by the Treasurer up to Nov. 1. Errors in name or address should be reported to Secretary Bromberg at once to facilitate prompt correction.

This list, as published, constitutes the mailing list of the Journal, and any member failing to receive his Journal is requested to write for a duplicate copy. No name has been intentionally left off. If your name does not appear, be kind enough to notify the Secretary, so that he may make the correction.

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Hall, S. B.,	Clinton	Anderson
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			Hicks, H. E., Newbern		Dyer
			Holland, W. W., Dyersburg		Dyer
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			Morgan, G. D., Lane		Dyer
			Moody, A. H., Secy., Dyersburg		Dyer

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Rawles, I. N., Dyersburg		Dyer	Borden, H. S., Greeneville, R. F. D. 2		Green
Price, J. G., Dyersburg		Dyer	Bell, Jas. B., Pres., Greeneville, R. F. D. 2		Green
Turner, C. A., Dyersburg		Dyer	Blanton, M. A., Secy., Baileyton, R. F. D. 1		Green
Walker, N. S., Dyersburg		Dyer	Cloyd, J. W., Mosheim		Green
Walker, T. J., Dyersburg		Dyer	Fox, C. P., Greeneville		Green
Watson, W. P., Dyersburg		Dyer	Hays, G. S., Greeneville		Green
Williamson, Edd., Finley		Dyer	Hawkins, W. H., Greeneville		Green
Wynne, J. W., Newbern		Dyer	Huffaker, R. O., Chucky City		Green
Albright, J. A., Somerville		Fayette	Hughes, J. B., Jeraldstown		Green
Boals, A. O., Pres., Somerville		Fayette	Holt, J. S., Midway		Green
Crook, C. N., Somerville		Fayette	Jeffers, W. L., Baileyton		Green
Moorman, H. C., Secy., Somerville		Fayette	Myers, E. M., Bulls Gap		Green
Robertson, C. W., Somerville		Fayette	Ruble, H. H., Greeneville		Green
Bennett, B. T., Trenton		Gibson	Robinson, F. P., Greeneville, R. F. D.		Green
Caldwell, B. D., Milan		Gibson	Simpson, H. A., Baileyton, R. F. D.		Green
Clopton, A. T., Milan		Gibson	Taylor, Wm. B., Greeneville		Green
Cochran, T. N., Trenton		Gibson	Taylor, H. M., Greeneville		Green
Dodds, G. W., Trenton		Gibson	Woolsey, Thos. H., Greeneville, R. F. D.		Green
Faucett, J. T., Trenton		Gibson	Wilhoit, J. S. J., Afton, R. F. D.		Green
Hunt, R. H., Humboldt		Gibson	Woodyard, S. W., Greeneville		Green
Harwood, T. E., Trenton		Gibson	Bales, Thos. E., Morristown		Hamblen
McRee, W. C., Secy., Trenton		Gibson	Brown, J. H., Talbott		Hamblen
Moore, J. C., Trenton		Gibson	Cass, H. M., Morristown		Hamblen
Medling, W. L., Dyer		Gibson	Dice, J. B. F., Morristown		Hamblen
Matthews, E. C., Trenton		Gibson	Henderson, P. L., Morristown		Hamblen
Penn, B. S., Pres., Humboldt		Gibson	Howell, W. E., Morristown		Hamblen
Penn, G. W., Humboldt		Gibson	Manard, J. J., Morristown		Hamblen
Presten, J. H., Humboldt		Gibson	Milligan, L. H., Morristown		Hamblen
Preston, W. F., Humboldt		Gibson	Painter, F. F., Morristown		Hamblen
Paris, Jno. C., Kenton		Gibson	Pangle, H. G., Russellville		Hamblen
Oliver, G. W., Medina		Gibson	Ruble, W. G., Morristown, Secy.		Hamblen
Rozelle, J. H., Gibson		Gibson	Shields, D. E., Morristown, Pres.		Hamblen
Thompson, Sidney, Humboldt		Gibson	Walker, I. D., Alpha		Hamblen
Walker, D. A., Trenton		Gibson	Woods, J. O., Morristown		Hamblen
Wyatt, F. E., Yorkville		Gibson	Abernathy, Thos. E., Bates Block, Chat-		Hamilton
Tyree, C. E., Trenton		Gibson	tanooa		Hamilton
Abernathy, C. A., Pulaski		Giles	Allen, Benj. G., 211 East 8th St., Chat-		Hamilton
Abernathy, W. D., Pulaski		Giles	tanooa		Hamilton
Abernathy, Shields, Secy., Pulaski		Giles	Anderson, E. B., over 739 Market St.,		Hamilton
Allen, A. M., Buford Station		Giles	Chattanooga		Hamilton
Baugh, Jno. E., Elkton		Giles	Anderson, E. C., Highland Park Station,		Hamilton
Black, Wm. E., Minor Hill		Giles	Chattanooga		Hamilton
Blackburn, Jas. K., Pulaski		Giles	Anderson, W. E., James Bldg., Chatta-		Hamilton
Butler, Geo. D., Pulaski		Giles	nooga		Hamilton
Cole, Wm. H., Minor Hill		Giles	Applegate, W. A., 300 Pennsylvania Ave.,		Hamilton
Copeland, W. F., Campbellsville		Giles	Chattanooga		Hamilton
Dean, Allen W., Brick Church		Giles	Atlee, Jas. H., Pres., 219 Oak St., Chatta-		Hamilton
Freeman, E. C., Pulaski		Giles	nooga		Hamilton
Grimes, G. C., Bodenham		Giles	Banks, W. A., 313 Chamberlain Ave.,		Hamilton
Harris, Jno. S., Minor Hill		Giles	Chattanooga		Hamilton
Herbert, Robt. N., Aspen Hill		Giles	Barker, H. M., Alton Park		Hamilton
Lancaster, A. J., Pisgah		Giles	Bell, Jas. T., Daisy, Tenn.		Hamilton
Lancaster, Geo. W., Pisgah		Giles	Berlin, Henry, 110 McCollie Ave., Chat-		Hamilton
LaRue, Jas. A., Pulaski		Giles	tanooa		Hamilton
Lowry, J. B., Smyrna		Giles	Blackwell, O. L., Worley		Hamilton
May, J. P., Pres., Aspen Hill		Giles	Bogart, W. G., 518 Georgia Ave., Chat-		Hamilton
Marris, John H., Jr., Bodenham		Giles	tanooa		Hamilton
Neal, J. R., Wales Station		Giles	Bogart, W. M., Hill City, Tenn.		Hamilton
Sumpter, E. R., Pulaski		Giles	Brooks, J. C., over Voight's Drug Store,		Hamilton
Woodard, B. H., Elkton		Giles	Chattanooga		Hamilton
Whitfield, Thomas, Veto, Ala.		Giles	Broyles, J. N., East Lake		Hamilton
Akers, R. M., Nero, Ky.		Grainger	Byrd, E. H., East Chattanooga		Hamilton
Atkins, C. A., Powder Springs		Grainger	Calhoun, Jno. D., Guild		Hamilton
Campbell, J. H., Rutledge		Grainger	Cleary, A. D., 602 Georgia Ave., Chat-		Hamilton
Idol, Willis, Leas Springs		Grainger	tanooa		Hamilton
Idol, E. T., Washburn		Grainger	Colmore, R. N., 826 Market St., Chat-		Hamilton
LeQuire, G. D., Rutledge		Grainger	tanooa		Hamilton
Livingston, G. W., Noeton		Grainger	Cunningham, J. C., Hixson		Hamilton
Neergaard, F. A., Rutledge		Grainger	Davis, K. D., Weihl Bldg., Chattanooga		Hamilton
Pierce, J. W., Pres., Tate Springs		Grainger	Davis, M. D., Weihl Bldg., Chattanooga		Hamilton
Wallace, R. M., Rutledge		Grainger	Dietrich, W. A., Miller Bldg., Chatta-		Hamilton
Britton, F. C., Greeneville, R. F. D. 9		Green	nooga		Hamilton
Brumley, S. T., Greeneville, R. F. D.		Green	Dye, J. S., 5 East 8th St., Chattanooga		Hamilton
Bailey, G. N., Baileyton		Green			

Name	Address	County	Name	Address	County
Eblen, Thos. N., Tyner	Hamilton		Smith, Henry G., Care Essex Co. Hosp. for Insane, Cedar Grove, N. J.	Hamilton	
Ellis, C. C., Central Block, Chattanooga	Hamilton		Tatum, R. H., 826 Market St., Chatta- nooga	Hamilton	
Ellis, G. M., 211 E. 8th St., Chattanooga	Hamilton		Taylor, J. H., Hamilton Nat'l Bank Bldg., Chattanooga	Hamilton	
Fancher, H. L., James Bldg., Chatta- nooga	Hamilton		Travis, B. F., James Bldg., Chattanooga	Hamilton	
Fowler, S. A., 1100 Whiteside St., Chat- tanooga	Hamilton		Wagner, M. M., "The Highlands," Chat- tanooga	Hamilton	
Gentry, J. A., Times Bldg., Chattanooga	Hamilton		Wallace, Raymond, "The Elizabeth," Chattanooga	Hamilton	
Gibbs, Vaulk, 831½ Market St., Chatta- nooga	Hamilton		Wert, B. S., 5 E. 8th St., Chattanooga	Hamilton	
Goodwin, J. L., 211 E. 8th St., Chatta- nooga	Hamilton		West, Geo. R., 10 W. 8th St., Chattanoo- ga	Hamilton	
Graham, C. G., 716 Market St., Chatta- nooga	Hamilton		Williams, G. V., 224½ E. Main St., Chattanooga	Hamilton	
Green, Jas. E., 226½ E. Main St., Chat- tanooga	Hamilton		Williamson, L. C., East Lake	Hamilton	
Gurney, Chas. H.	Rossville, Ga.		Wilson, H. B., James Bldg., Chattanooga	Hamilton	
Hale, B. C., Guild	Hamilton		Wise, E. B., 739 Market St., Chattanooga	Hamilton	
Hanna, J. E., 500 E. 9th St., Chatta- nooga	Hamilton		Wood, F. L., 224½ E. Main St., Chat- tanooga	Hamilton	
Haskins, J. B., 211 E. 8th St., Chatta- nooga	Hamilton		Woolford, J. S. B., "The Highland," Chat- tanooga	Hamilton	
Hogshead, J. M., 602 Georgia Ave., Chat- tanooga	Hamilton		Woolner, A. B., 223 E. 8th St., Chatta- nooga	Hamilton	
Holtzclaw, C., 213 E. 8th St., Chatta- nooga	Hamilton		Wylie, C. B., Bates Block, Chattanooga	Hamilton	
Hope, W. T., 101½ E. 8th St., Chatta- nooga	Hamilton		Yarnell, S. T., Loveman Bldg., Chatta- nooga	Hamilton	
Horton, J. W., James Bldg., Chattanooga	Hamilton		Zeigler, T. J., East Chattanooga	Hamilton	
Hughes, O. G., Ooltewah	Hamilton		Clifton, Joe, Hickory Valley	Hardeman	
James, Thos. L., Orme	Hamilton		Curry, G. B., Toone	Hardeman	
Johnson, Jos. W., James Bldg., Chatta- nooga	Hamilton		Cocke, W. S., Hugo, Okla.	Hardeman	
Johnson, E. C., 213 E. 8th St., Chatta- nooga	Hamilton		Dorris, H. E., Bolivar	Hardeman	
Larimore, H. P., Secy., Bates Block, Chattanooga	Hamilton		Goddard, W. L., Saulsbury	Hardeman	
Macquillan, J. W., over 600 Market St., Chattanooga	Hamilton		Milstead, H. W., Bolivar	Hardeman	
Martin, C. R., Chattanooga	Hamilton		Neely, J. J., Bolivar	Hardeman	
McGhee, John B., 222½ E. Main St., Chattanooga	Hamilton		Sassar, J. D., Sr., Pres., Middleton	Hardeman	
Meacham, M. A., Loveman Bldg., Chat- tanooga	Hamilton		Tate, Robt. W., Secy., Bolivar	Hardeman	
Morris, D. C., Chattanooga	Hamilton		Allen, Jno. T., Brownsville	Haywood	
Newell, E. T., Walnut St., Chattanooga	Hamilton		Cooper, Thos. W., Brownsville	Haywood	
Newell, E. D., Walnut St., Chattanooga	Hamilton		Dickson, A. C., Brownsville, R. F. D.	Haywood	
Nefe, A. A., Lookout Mountain	Hamilton		Edwards, Jos. L., Secy., Brownsville	Haywood	
Null, H. O., Ridgedale	Hamilton		Heard, F. C., Brownsville, R. F. D.	Haywood	
Partridge, Jas., Loveman Bldg., Chatta- nooga	Hamilton		Norvelle, J. C., Brownsville	Haywood	
Rathmell, J. R., Hamilton Nat'l Bank Bldg., Chattanooga	Hamilton		Patton, J. S., Pres., Brownsville	Haywood	
Reisman, E. E., 5 E. 9th St., Chatta- nooga	Hamilton		Sorrell, A. H., Brownsville	Haywood	
Richardson, R. M., Guild	Hamilton		Sevier, A. H., Brownsville	Haywood	
Richmond, Jos. A., Harrison, Tenn.	Hamilton		Stewart, W., Brownsville	Haywood	
Ryan, Geo. F., 426 Market St., Chatta- nooga	Hamilton		Summers, William, Brownsville, R. F. D.	Haywood	
Schunacker, L., James Bldg., Chatta- nooga	Hamilton		Warren, J. W., Forked Deer	Haywood	
Selden, J. M., 5 E. 8th St., Chattanooga	Hamilton		Whitelaw, W. H., Brownsville	Haywood	
Spradling, L. W., 5 E. 9th St., Chatta- nooga	Hamilton		Wilkerson, J. B., Brownsville	Haywood	
Stapp, Fred B., 9½ E. 8th St., Chatta- nooga	Hamilton		Arnold, J. M., Lexington	Henderson	
Steele, Jno. B., James Bldg., Chattanooga	Hamilton		Bolen, C. E., Wildersville	Henderson	
Steele, N. C., Loveman Bldg., Chatta- nooga	Hamilton		Boyd, M. P., R. F. D., Yuma	Henderson	
Stem, L. T., East Lake, Tenn.	Hamilton		Brandon, G. A., Lexington	Henderson	
Sullivan, Bayard, 5 E. 9th St., Chatta- nooga	Hamilton		Hendricks, J. W., Lexington	Henderson	
Steele, N. C., Hamilton Nat'l Bank Bldg., Chattanooga	Hamilton		Huntsman, W. F., Secy., Lexington	Henderson	
Steele, Willard, Hamilton Nat'l Bank Bldg., Chattanooga	Hamilton		Johnston, C. H., Lexington	Henderson	
			Keeton, J. T., Scott's Hill	Henderson	
			Parker, S. T., Pres., Lexington	Henderson	
			Waller, A. L., Juno	Henderson	
			Stinson, J. C., Center Point	Henderson	
			Watson, W. T., Lexington	Henderson	
			Wyley, A. L., Scotts Hill	Henderson	
			Abernathy, G. T., Paris	Henry	
			Freeman, J. T., Big Sandy	Henry	
			Grainger, R. A., Paris	Henry	
			McSwain, J. H., Secy., Paris	Henry	
			McSwain, O. A., Paris	Henry	
			Perry, R. J., Springville	Henry	
			Rodgers, C. W., Pres., Como	Henry	
			Batton, J. A., Coble	Hickman	
			Beasley, Jno. S., Centreville	Hickman	
			Beasley, R. P., Secy., Centreville	Hickman	

Name	Address	County	Name	Address	County
Cagle, W. D., Lobelville	Hickman	Howard, P. T., 131 Pruitt Place, Knox- ville	Knox		
Cooper, J. D., Sunrise	Hickman	Jones, E. L., Ledgewick Bldg., Knoxville	Knox		
Flowers, D. W., Little Lot	Hickman	Jones, T. R., Walnut St., Knoxville	Knox		
Stephenson, C. V., Centreville	Hickman	Jones, C. B., Box 139, Knoxville	Knox		
Webb, J. B., Goodrieh	Hickman	Kelso, H. J., 425 W. Church Ave., Knoxville	Knox		
Binkley, D. C. K., Hustburg	Humphreys	Kabler, W. F., Bristol	Knox		
Clark, Frank, Haydensburg	Humphreys	Kennedy, J. M., N. Central, Knoxville	Knox		
Cooley, J. T., Waverly	Humphreys	Kern, A. G., Box 405, Knoxville	Knox		
Coke, F. H., Hustburg	Humphreys	Kincaid, J. H., 421 W. Church Ave., Knoxville	Knox		
Daniel, W. H., Secy., McEwen	Humphreys	Kyle, A. G., Deaderick Bldg., Knoxville	Knox		
Gould, H. F., Pres., Hustburg	Humphreys	Luttrell, Walter, 504 Asylum, Knoxville	Knox		
Horner, W. B., Plant	Humphreys	Lones, C. E., McTownlee Bldg., Knoxville	Knox		
Slayden, W. W., Waverly	Humphreys	Lynn, W. N., L. M. Hospital, Knoxville	Knox		
Smith, J. N., Cuba Landing	Humphreys	McCampbell, H. H., 614 Walnut St., Knoxville	Knox		
Sugg, J. A., McEwen	Humphreys	McCown, R. M., W. Church Ave., Knoxville	Knox		
Teas, J. J., Waverly	Humphreys	McNabb, C. P., 904 S. Gay St., Knoxville	Knox		
Draper, Atha, R. R. 2, Gainesboro	Jackson	McReynolds, R. L., Knoxville	Knox		
Hix, J. B., Flyuns Lick	Jackson	Miller, J. E., Rogersville	Knox		
Loftis, H. P., Pres., Gainesboro	Jackson	Miller, S. M., 209 W. Church Ave., Knoxville	Knox		
Mabry, E. W., Secy., Gainesboro	Jackson	Miller, S. R., Box 743, Knoxville	Knox		
McCoin, M. M., Gainesboro	Jackson	Nash, J. C., Knoxville	Knox		
Quarles, J. D., Whitleyville	Jackson	Newman, W. S., 406 W. Church Ave., Knoxville	Knox		
Reeves, C. E., Gainesboro	Jackson	Oppenheimer, A. T., Knoxville	Knox		
Anderson, J. C., Pres., Dandridge	Jefferson	Richmond, W. D., Empire Bldg., Knoxville	Knox		
Cline, B. E., Strawberry Plains	Jefferson	Ristine, C. E., Box 75, Knoxville	Knox		
Caldwell, J. M., Jefferson City	Jefferson	Rule, A. L., Box 612, Knoxville	Knox		
Cooper, W. S., White Pine	Jefferson	Rogers, K. E., Cherokee Bldg., Knoxville	Knox		
Dukes, N. M., Strawberry Plains	Jefferson	Rogers, J. W., Knoxville	Knox		
French, T. R., Dandridge	Jefferson	Sheddan, L. L., 419 W. Church Ave., Knoxville	Knox		
Huggins, J. I., Secy., Dandridge	Jefferson	Sisk, J. A., Empire Bldg., Knoxville	Knox		
King, W. F., Jefferson City	Jefferson	Swaney, O. M., Treadway	Knox		
Roberts, W. E., Talbotts	Jefferson	Tillery, J. P., 419 W. Church Ave., Knoxville	Knox		
Tadlock, W. L., Talbotts	Jefferson	Vance, W. K., Bristol	Knox		
Tittsworth, B. M., Jefferson City	Jefferson	Wallace, W. L., N. Broadway, Knoxville	Knox		
Tinsley, P. A., Dandridge	Jefferson	West, J. Q. A., Arnstein Bldg., Knoxville	Knox		
Tar, H. L., Jefferson City	Jefferson	West, W. J., Empire Bldg., Knoxville	Knox		
Walker, Jas. H., White Pine	Jefferson	White, W. H. L., Young Bldg., Knoxville	Knox		
Wagner, P. L., New Market	Jefferson	Wilder, Dora Lee, R. F. D. No. 1, Knoxville	Knox		
Acuff, P. H., Care Knox Gen'l Hosp., Knoxville	Knox	Williams, D. H., 613 Walnut St., Knox- ville	Knox		
Acuff, S. D., 1314 Central Ave., Knoxville	Knox	Young, B. F., Box 633, Knoxville	Knox		
Atchley, W. P., Empire Bldg., Knoxville	Knox	Zemp, E. R., Box 349, Knoxville	Knox		
Armstrong, W. H., Rogersville	Knox	Adams, Jno. D., Bessie	Lake		
Austin, W. S., Knoxville, Box 5521	Knox	Alexander, W. S., Ridgely	Lake		
Alexander, Eben, Box 563, Knoxville	Knox	Alexander, J. D., Secy., Tiptonville	Lake		
Booker, G. W., The Oxford, Knoxville	Knox	Griffin, J. T., Tiptonville	Lake		
Blankenship, J. P., W. Church Ave., Knoxville	Knox	Griffin, R. B., Ridgely	Lake		
Bosworth, B. D., Maryville	Knox	Griffin, R. W., Tiptonville	Lake		
Boyd, S. B., Box 115, Knoxville	Knox	Hellen, R. E., Ridgely	Lake		
Bowen, Wm., Broad & Central, Knoxville	Knox	Kelty, E. T., Cronansville	Lake		
Bull, C. G., Medical College, Knoxville	Knox	Smith, A. P., Ridgely	Lake		
Campbell, Michael, Lyonsview, Knoxville	Knox	Wright, J. M., Pres., Tiptonville	Lake		
Carmichael, C. J., Walnut St., Knoxville	Knox	Chapman, S. T., R. F. D. 2, Halls	Lauderdale		
Carmichael, J. W., Walnut St., Knoxville	Knox	Glenn, S. M., Ripley	Lauderdale		
Casensburg, S. F., McTannen Bldg., Knoxville, Knox Cases, B. B., 508 W. Clinch Ave., Knoxville	Knox	Hillsman, C. W., Henning	Lauderdale		
Catlett, W. A., 205-207 McTownlee Bldg., Knoxville	Knox	Kellner, T. B., Ripley	Lauderdale		
Cochran, W. R., 721 Walnut St., Knoxville	Knox	Laekey, W. K., Ripley	Lauderdale		
Copenhaver, M. M., Lonsdale	Knox	Laekey, J. B., Ripley	Lauderdale		
Christensberg, H. E., Lonsdale	Knox	Lewis, J. R., Secy., Ripley	Lauderdale		
Cullinan, John, Jr., W. Church Ave., Knoxville	Knox	Lusk, G. A., Ripley	Lauderdale		
Depree, R. V., Medical College, Knoxville	Knox	Miller, W. D., Pres., Ripley	Lauderdale		
Davis, Chas. Huff, Box 674, Knoxville	Knox	Miller, T. E., Ripley	Lauderdale		
Deaderick, Chalmers, 501 W. Church Ave., Knoxville	Knox	Miller, Thos., Halls	Lauderdale		
DeArmond, C. C., South Knoxville	Knox	Massengill, A. P., Halls	Lauderdale		
Frayser, B. H., Knoxville	Knox	Osteen, J. R., Ashport	Lauderdale		
Fritzgerald, T. F., R. F. D. No 1, Knox- ville	Knox	Phillips, J. D., Gold Dust	Lauderdale		
Garrison, A. R., Byington	Knox	Porter, J. A., Ripley	Lauderdale		
Greer, W. A., Ledgewick Bldg., Knoxville	Knox	Sandford, J. W., Ripley	Lauderdale		
Hill, O. W., Cherokee Bldg., Knoxville	Knox	Sandford, W. C., Henning	Lauderdale		
Holloway, V. D., 609 Walnut St., Knoxville	Knox	Scott, G. T., Curve	Lauderdale		

Name	Address	County	Name	Address	County
Sharpe, S. B., Henning.....	Lauderdale		Anderson, H. O., Williamsport.....	Maury	
Tucker, W. H., Halls.....	Lauderdale		Bundrant, W. C., St. Joseph.....	Maury	
Walker, C. B., Ripley.....	Lauderdale		Beasley, M. A., Hampshire.....	Maury	
Anderson, J. M., Fayetteville.....	Lincoln		Biddle, P. D., Columbia.....	Maury	
Ashley, T. E., Fayetteville, R. F. D. No 1.....	Lincoln		Brown, T. B., R. F. D. 2, Columbia.....	Maury	
Blair, E. K., Fayetteville.....	Lincoln		Church, R. M., Williamsport.....	Maury	
Brock, B. B., Blanche.....	Lincoln		Collins, E. E., Columbia.....	Maury	
Farrar, J. P., Fayetteville, R. F. D., No. 8.....	Lincoln		Cook, M. M., Seely, Santa Fe.....	Maury	
Cannon, W. F., R. F. D. 5, Fayetteville.....	Lincoln		Edwards, J. A., Columbia.....	Maury	
Cullum, J. M., Fayetteville.....	Lincoln		Faucett, Dr. Paul H., Columbia.....	Maury	
Forbes, E. C., Howell.....	Lincoln		Hardin, Jas. O., (Vet.) Spring Hill.....	Maury	
Gilliam, L. H., Kelso.....	Lincoln		Hardison, T. J., Carters Creek.....	Maury	
Goodrich, C. L., Fayetteville.....	Lincoln		Harrison, W. B., (Vet.), Columbia.....	Maury	
Graham, J. T., Mulberry, R. F. D. No. 1.....	Lincoln		Haywood, J. L., Carters Creek.....	Maury	
Holland, E. F., Mulberry.....	Lincoln		Horsley, A. S., Columbia.....	Maury	
Joplin, W. S., Petersburg.....	Lincoln		Jones, Jas. H., Columbia.....	Maury	
McRady, S. F., Petersburg.....	Lincoln		Kittrell, W. H., Mt. Pleasant.....	Maury	
McWilliams, J. M., Fayetteville.....	Lincoln		Perry, R. S., Columbia.....	Maury	
Noblett, B. E., Pres., Fayetteville.....	Lincoln		Orr, Eugene, R. F. D. 1, Columbia.....	Maury	
Patrick, T. A., Secy., Fayetteville.....	Lincoln		Pillow, Robert, Columbia.....	Maury	
Shelten, J. M., Kelso, R. F. D. No 1.....	Lincoln		Porter, O. J., Columbia.....	Maury	
Sloan, J. E., Harms, R. F. D. No 1.....	Lincoln		Ragsdale, L. E., Williamsport.....	Maury	
Summers, W. P., Harms, R. F. D. No 1.....	Lincoln		Thomas, H. E., Pres., Columbia.....	Maury	
Wyatt, J. M., Fayetteville.....	Lincoln		Timmons, E. A., Columbia.....	Maury	
Yearwood, A. L., Fayetteville.....	Lincoln		Walker, M. W., Santa Fe.....	Maury	
Burditt, G. M., Lenoir City.....	Loudon		Webb, W. R., Hampshire.....	Maury	
Eblin, J. G., Lenoir City.....	Loudon		Wilkes, J. H., (Vet.), Columbia.....	Maury	
Fout, W. T., Lenoir City.....	Loudon		Wilkes, J. W., Columbia.....	Maury	
Harrison, J. J., Loudon.....	Loudon		Williamson, J. G., Jr., Columbia.....	Maury	
Hickman, T. J., Secy., Lenoir City.....	Loudon		Williamson, J. G., Sr., Columbia.....	Maury	
Leiper, J. T., Pres., Lenoir City.....	Loudon		Abel, W. J., Decaturville.....	McMinn	
Pagett, W. D., Lenoir City.....	Loudon		Basinger, Jno. L., Riceville.....	McMinn	
Arnold, Jno., M., Jackson.....	Madison		Brendle, D. P., Englewood.....	McMinn	
Blackmon, Jno., A., Jackson.....	Madison		Buttrau, W. H., Niota.....	McMinn	
Crook, J. L., Jackson.....	Madison		Copenhaver, L. A., Englewood.....	McMinn	
Crook, J. A., Jackson.....	Madison		Center, H. E., Etowah.....	McMinn	
Duckworth, W. C., Jackson.....	Madison		Creech, Richard, Englewood.....	McMinn	
Drake, C. C., Jackson.....	Madison		Foree, J. O., Athens.....	McMinn	
Dancy, A. B., Jackson.....	Madison		Fronyberger, W. R., Pendergrast.....	McMinn	
Gresham, J. W., Jackson.....	Madison		Kittrell, S. S., Englewood.....	McMinn	
Greer, R. L., Norwood.....	Madison		Moore, W. S., Secy., Athens.....	McMinn	
Hawkins, Herman, Secy., Jackson.....	Madison		Nichols, Jno. O., Etowah.....	McMinn	
Hopper, J. D., Pres., Jackson.....	Madison		Nankivell, Jas. R., Pres., Athens.....	McMinn	
Hamilton, F. B., Jackson.....	Madison		Proudfoot, Jas. L., Athens.....	McMinn	
Henderson, S. A., Jackson.....	Madison		Staunton, G. W., Athens.....	McMinn	
Herron, J. T., Jackson.....	Madison		Shipley, Gus, Athens.....	McMinn	
Jones, Jas. T., Jackson.....	Madison		Taylor, Henry F., Calhoun.....	McMinn	
Jones, H. L., Jackson.....	Madison		Vinsant, Chas. C., Etowah.....	McMinn	
Lusk, P. B., Jackson.....	Madison		Bell, W. T., Selmer.....	McNairy	
Lockman, W. L., Medon.....	Madison		Boatman, J. A., Bethel Springs, R. R.		
McCoy, Ambrose, Jackson.....	Madison		No. 1.....	McNairy	
O'Connor, F. J., Jackson.....	Madison		Dodds, B. C., Secy., Gravelhill.....	McNairy	
Raines, Jas. T., Malesus.....	Madison		Hodges, W. H., Finger.....	McNairy	
Raines, Jessie, Malesus.....	Madison		King, J. M., Ramer.....	McNairy	
Roehelle, W. F., Jackson.....	Madison		Key, M. C., Ramer.....	McNairy	
Smythe, Kelly, Spring Creek.....	Madison		Smith, J. L., Selmer.....	McNairy	
Troutt, J. M., Jackson.....	Madison		Smith, J. R., Selmer.....	McNairy	
Webb, L. L., Carroll.....	Madison		Sanders, E. G., Stantonville.....	McNairy	
Williamson, Leon, Jackson.....	Madison		Sanders, H. C., Pres., Selmer, R. R. No 1.....	McNairy	
Baxter, R. G., Caney Springs.....	Marshall		Wallace, W. W., Selmer.....	McNairy	
Crunk, J. C., Luna.....	Marshall		Barnes, L. L., Vonore.....	Monroe	
Dickey, C. W., Cornersville.....	Marshall		Brock, R. A., Pres., Sweetwater.....	Monroe	
Dryden, D. M., Petersburg.....	Marshall		Bagwell, B. W., Madisonville.....	Monroe	
Gault, F. H., Cornersville.....	Marshall		Davis, J. E., Secy., Sweetwater.....	Monroe	
Jones, Alf, Cornersville.....	Marshall		Hardin, J. H., Sweetwater.....	Monroe	
Hardison, C. C., Lewisburg.....	Marshall		McClain, W. A., Sweetwater.....	Monroe	
Hardison, J. A., Pres., Lewisburg.....	Marshall		McCollum, J. A., Tariffville.....	Monroe	
Hardison, S. T., Lewisburg.....	Marshall		Penland, S. N., Madisonville.....	Monroe	
Logan, T. R., Lewisburg.....	Marshall		Roberts, T. M., Sweetwater.....	Monroe	
Moffitt, S. A., Mooresville.....	Marshall		Shearer, H. C., Madisonville.....	Monroe	
Ransom, W. C., Farmington.....	Marshall		Acree, F. M., Dover, Tenn.....		
Reed, T. E., Secy., Lewisburg.....	Marshall		Brandau, Jno. W., Clarksville.....	Montgomery	
Vaden, W. E., Rich Creek.....	Marshall		Ezell, J. J., Clarksville.....	Montgomery	
White, Buford, Lewisburg.....	Marshall		Ferguson, R. T., R. F. D. 4, Clarksville.....	Montgomery	
White, Garreth, Chapel Hill.....	Marshall		Frey, J. H., Clarksville.....	Montgomery	
Womack, C. W., Lewisburg.....	Marshall		Hughes, M. L., Clarksville.....	Montgomery	

Name	Address	County
Hunt, I. E., New Providence.....	Montgomery	
Macon, R. B., Clarksville.....	Montgomery	
Marable, T. H., Clarksville.....	Montgomery	
Morrison, J. C., Clarksville.....	Montgomery	
McFall, R. J., Erin	Montgomery	
Neblett, L. L., Stayton.....	Montgomery	
Neblett, S. E., Southside.....	Montgomery	
Nesbitt, H. A., Cunningham.....	Montgomery	
Runyon, R. J., Pres., Clarksville.....	Montgomery	
Slayden, J. D., Clarksville.....	Montgomery	
Vaughan, G. E., Clarksville.....	Montgomery	
Webb, I. E., St. Bethlehem.....	Montgomery	
Webb, Roy, Secy., St. Bethlehem.....	Montgomery	
Bird, A., Wartburg.....	Morgan	
Jones, S. H., Secy., Sunbright.....	Morgan	
Todd, G. R., Wartburg.....	Morgan	
Wiltzie, A. S., Pres., Lancing.....	Morgan	
Blanton, M. A., Union City.....	Obion	
Butler, H. T., Union City.....	Obion	
Capps, J. M., Kenton.....	Obion	
Carlton, J. D., Union City.....	Obion	
Chandler, S. E., Minnick.....	Obion	
Cunningham, J. P., Elbridge.....	Obion	
Darnall, J. F., Pres., Obion.....	Obion	
Glover, Ila, Troy.....	Obion	
Hayner, J. B., Troy.....	Obion	
Howard, J. A., McConnell.....	Obion	
Jernigan, V. J., Obion.....	Obion	
Maddox, D. C., Terrell.....	Obion	
Marshall, T. E., Union City.....	Obion	
Matlock, P. N., Mason Hall.....	Obion	
Paschal, J. B., Fulton, Ky.	Obion	
Pearce, D. M., Union City.....	Obion	
Prather, D. J., Secy., Union City.....	Obion	
Prather, P. W., Woodlawn Mills.....	Obion	
Roberts, W. F., Troy.....	Obion	
Roper, J. F., Union City.....	Obion	
Sharp, J. B., Obion.....	Obion	
Watson, F. W., Union City.....	Obion	
Wells, J. J., Glass.....	Obion	
White, E. H., Rives.....	Obion	
Wright, J. L., Elbridge.....	Obion	
Bertram, J. F., Manson.....	Obion	
Breeding, W. M., Livingston.....	Overton	
Capps, M. B., Livingston.....	Overton	
Lansden, J. B., Livingston.....	Overton	
McDonald, J. T., Monroe.....	Overton	
Qualls, A. B., Secy., Livingston.....	Overton	
Reed, W. A., Livingston.....	Overton	
Smith, J. E., Pres., Hilham.....	Overton	
Wells, M. H., Hilham.....	Overton	
Akin, Elias Marion, Copperhill.....	Polk	
Barnes, James Jackson, Copperhill.....	Polk	
Copeland, W. J., Fetzerton.....	Polk	
Geisler, Francis Oto, Secy., Isabella.....	Polk	
Gilliam, William Young, Copperhill.....	Polk	
Hyder, Robert Lee, Isabella.....	Polk	
Kinsey, Fred M., Ducktown.....	Polk	
Kinsey, Lucius E., Ducktown.....	Polk	
Lewis, Albert W., Pres., Copperhill.....	Polk	
Adams, J. O., Pres., Monterey.....	Putnam	
Curtis, H. C., Algood.....	Putnam	
Denton, Samuel, Buffalo Valley.....	Putnam	
Dyer, Lex, Secy., Cookeville.....	Putnam	
Ensor, L. D. J., Cookeville.....	Putnam	
Farmer, W. S., Cookeville.....	Putnam	
Howard, W. A., Algood.....	Putnam	
Moore, J. T., Algood.....	Putnam	
Storris, J. R., Cookeville.....	Putnam	
Trapp, J. S., Sparta.....	Putnam	
Ray, R. L., Monterey.....	Putnam	
Chadwick, P. C., Rhea Springs.....	Rhea	
Clack, J. M., Spring City.....	Rhea	
Donaldson, Sam, Dayton.....	Rhea	
Gillespie, J. R., Dayton.....	Rhea	

Name	Address	County
Gross, A. W., Dayton.....	Rhea	
Hammock, J. W., Graysville.....	Rhea	
Lovell, A. L., Graysville.....	Rhea	
McDonald, W. P., Spring City.....	Rhea	
McKenzie, Jas. L., Pres., Graysville.....	Rhea	
Miller, R. C., Secy., Evensville.....	Rhea	
Thomison, J. G., Dayton.....	Rhea	
Thomison, W. F., Dayton.....	Rhea	
Watkins, R. K., Spring City.....	Rhea	
Yancey, Sam M., Dayton, R. F. D. No. 4.....	Rhea	
Clack, J. M., Rockwood.....	Roane	
Clack, W. S., Rockwood.....	Roane	
Givan, G. C. G., Secy., Harriman.....	Roane	
Goodwyn, J. B., Harriman.....	Roane	
Hill, W. W., Harriman.....	Roane	
Nelson, J. E., Rockwood.....	Roane	
Phillips, E. S., Rockwood.....	Roane	
Roberts, John, Kingston.....	Roane	
Sewell, J. A., Rockwood.....	Roane	
Waller, J. J., Oliver Springs.....	Roane	
Wilson, J. C., Rockwood.....	Roane	
Williams, W. B., Harriman.....	Roane	
Zirkle, G. P., Kingston.....	Roane	
Brown, T. L. B., White House, R. R. No. 1.....	Robertson	

Name	Address	County
Covington, Jas. J., Cross Plains.....	Robertson	
Connell, Jas. R., Adams.....	Robertson	
Davis, D. E., Springfield.....	Robertson	
Fyke, Benjamin F., Secy., Springfield.....	Robertson	
Frey, J. J., Springfield, R. R. No. 6.....	Robertson	
Gossett, W. L., Portland, R. R. 1.....	Robertson	
Green, Jno. R., Springfield.....	Robertson	
House, Thos. B., Springfield.....	Robertson	
Jones, Guy R., Orlinda.....	Robertson	
Johnson, Turner L., Greenbrier.....	Robertson	
Mathews, Richard L., Springfield.....	Robertson	
Moore, Jerome, E., (Honorary), Springfield.....	Robertson	
Porter, William W., Springfield.....	Robertson	
Reeves, Jno. H., Springfield, R. R. No. 1.....	Robertson	
Ramer, D. W., Springfield, R. R. No. 3.....	Robertson	
Royster, William, Cedar Hill, R. R. No. 5.....	Robertson	
Sory, Bailey B., Cedar Hill.....	Robertson	
Sory, Leander F., Adams.....	Robertson	
Scott, Miles, Pres., Springfield, R. R. No. 9.....	Robertson	

Name	Address	County
Woodruff, Jas. B., Orlinda.....	Robertson	
Walton, L. B., (Honorary), White House, R. R. No. 1.....	Robertson	
Woodard, F. M., Springfield.....	Robertson	
Winters, W. W., Greenbrier.....	Robertson	
Bilbro, W. C., Murfreesboro.....	Rutherford	
Campbell, V. S., Murfreesboro.....	Rutherford	
Chadwick, W. E., Murfreesboro.....	Rutherford	
Crothwait, Geo. W., Florence.....	Rutherford	
Duggan, S. B., Eagleville.....	Rutherford	
Duggan, S. S., Eagleville.....	Rutherford	
Engles, W. J., Smyrna.....	Rutherford	
Grigg, S. C., Murfreesboro.....	Rutherford	
Huff, D. C., Christiana.....	Rutherford	
Jones, Enoch H., Murfreesboro.....	Rutherford	
Kelton, J. C., Lascassas.....	Rutherford	
Murfree, Jas. B., Murfreesboro.....	Rutherford	
Murfree, M. B., Murfreesboro.....	Rutherford	
Overall, Jas. C., Lascassas.....	Rutherford	
Pitts, Rufus, Murfreesboro.....	Rutherford	
Read, R. W., Murfreesboro.....	Rutherford	
Rees, H. C., Murfreesboro.....	Rutherford	
Rucker, Jas. J., Murfreesboro.....	Rutherford	
Smith, S. B., Overall.....	Rutherford	
White, B. N., Murfreesboro.....	Rutherford	
Yourcee, Wm. E., Readyville.....	Rutherford	
Boyatt, F. M., Oneida.....	Scott	
Foster, J. I., Huntsville.....	Scott	

Name	Address	County	Name	Address	County
Phillips, T. L., Pres., Newland.....	Scott	Farrington, S. M., Memphis Trust Bldg., Memphis	Shelby		
McGill, T. M., Norma.....	Scott	Frost, I. N., Station C., Memphis.....	Shelby		
Shields, J. A. P., Secy., Norma.....	Scott	Graham, Frank, Memphis Trust Bldg., Memphis	Shelby		
Thompson, M. E., Laxton.....	Scott	Gray, Jas. N., Arlington.....	Shelby		
Ayers, J. C., 2158 Union Ave., Memphis....	Shelby	Goltman, M., Memphis Trust Bldg., Memphis	Shelby		
Andrews, J. L., Rogers Bldg., Memphis....	Shelby	Hudson, A. G., Raines.....	Shelby		
Anderson, P. H., Tenn. Trust Bldg., Memphis	Shelby	Henning, B. G., Memphis Trust Bldg., Memphis	Shelby		
Anderson, W. S., Memphis Trust Bldg., Memphis	Shelby	Ham, E. C., Randolph Bldg., Memphis....	Shelby		
Branch, B. L., Collierville.....	Shelby	Haskell, L. W., Memphis	Shelby		
Blackburn, E. C., Randolph Bldg., Memphis	Shelby	Havell, W. T., Brunswick.....	Shelby		
Berry, H. L., Randolph Bldg., Memphis....	Shelby	Haynes, E. E., Randolph Bldg., Memphis..	Shelby		
Beaty, H. W., Station C., Memphis.....	Shelby	Hoover, F. B., Goodwyn Inst., Memphis...	Shelby		
Bridger, Jas. D., Memphis Trust Bldg., Memphis	Shelby	Henning, Max, Memphis Trust Bldg., Memphis	Shelby		
Beauchamp, Jesse L., 614 N. 7th St., Memphis	Shelby	Haase, M., Memphis Trust Bldg., Memphis..	Shelby		
Barton, Jas. L., 78 S. Main St., Memphis..	Shelby	Hall, D. M., Memphis Trust Bldg., Memphis..	Shelby		
Biggs, J. M., Memphis Trust Bldg., Memphis..	Shelby	Henderson, R. G., Randolph Bldg., Memphis..	Shelby		
Brinson, S. N., 201 Cooper Ave., Memphis..	Shelby	Holder, E. M., Memphis Trust Bldg., Memphis	Shelby		
Burns, W. B., Porter Bldg., Memphis.....	Shelby	Hill, J. F., Exchange Bldg., Memphis.....	Shelby		
Black, W. T., Randolph Bldg., Memphis....	Shelby	Holmes, J. B., 1686 Euclid Ave., Memphis..	Shelby		
Braun, Wm. T., 814 Exchange Bldg., Mem- phis	Shelby	Jacobs, A. G., Scimitar Bldg., Memphis....	Shelby		
Bearden, M. L., 1091 Greenwood, Memphis..	Shelby	Jones, F. A., Tenn. Trust Bldg., Memphis....	Shelby		
Baldwin, W. H., Station G, Memphis.....	Shelby	Jones, Heber, Exchange Bldg., Memphis..	Shelby		
Bell, Jno. C., 534 N. 2nd., Memphis.....	Shelby	Jelks, Jno. L., Tenn. Trust Bldg., Memphis..	Shelby		
Buford, G. C., Randolph Bldg., Memphis..	Shelby	Johnson, J. E., Memphis Trust Bldg., Memphis	Shelby		
Beck, C. M., 293 S. 3rd St., Memphis.....	Shelby	Jones, Kennedy, Tenn. Trust Bldg., Memphis	Shelby		
Bell, C. A., Lee Bldg., Memphis.....	Shelby	Jones, Geo. P., 218 McLemore St., Memphis..	Shelby		
Collier, Casa, Tenn. Trust Bldg., Memphis..	Shelby	Kane, Elizabeth C., Exchange Bldg., Memphis	Shelby		
Chaffee, F. R., Lucy	Shelby	Krauss, Wm., Memphis Trust Bldg., Memphis	Shelby		
Crisler, J. A., Peabody Hotel, Memphis....	Shelby	Kincaid, H. B., Memphis Trust Bldg., Memphis	Shelby		
Carter, J. Hugh, Tenn. Trust Bldg., Memphis	Shelby	Lewis, A. C., Exchange Bldg., Memphis....	Shelby		
Cullings, Jesse J., 83 W. Jackson Bldg., Memphis	Shelby	Leake, E. K., Collierville.....	Shelby		
Crutcher, J. R., 1411 Madison Ave., Memphis	Shelby	Livermore, Geo. R., Exchange Bldg., Memphis	Shelby		
Crofford, T. J., 211 N. 3rd St., Memphis...	Shelby	Lipscomb, J. A., 63 N. Main St., Memphis..	Shelby		
Campbell, W. C., Randolph Bldg., Memphis..	Shelby	Lerov, Louis, Tenn. Trust Bldg., Memphis..	Shelby		
Clary, W. F., Memphis Trust Bldg., Memphis	Shelby	Lawrence, W. S., Memphis Trust Bldg., Memphis	Shelby		
Castles, W. A. S., 63 1-2 N. Main St., Memphis	Shelby	Lanhorn, C. C., 700 N. Main St., Memphis..	Shelby		
Campbell, S. S., 729 Monroe St., Memphis..	Shelby	Meyer, L. L., Memphis Trust Bldg., Memphis	Shelby		
Clark, J. C., Goodwyn Inst., Memphis....	Shelby	Moore, Alfred, Randolph Bldg., Memphis..	Shelby		
Cochran, J. F., 579 5th St., Memphis.....	Shelby	McGhee, J. L., Memphis	Shelby		
Cunningham, J. W., Randolph Bldg., Memphis	Shelby	McMahon, A. R., Goodwyn Inst., Memphis..	Shelby		
Currie, J. A., Lee Bldg., Memphis.....	Shelby	Mitchell, Robt. H., So. Ex. Bldg., Memphis..	Shelby		
Dickson, Harry, Memphis	Shelby	Morrow, C. S., Rogers Bldg., Memphis....	Shelby		
Dunavant, B. N., Secy., Exchange Bldg., Memphis	Shelby	Mitchell, E. D., Randolph Bldg., Memphis..	Shelby		
Duvall, C. E., 218 McLemore St., Memphis..	Shelby	Malone, F. M., Capleville.....	Shelby		
Duncan, I. G., 422 N. Waldran, Memphis...	Shelby	Minor, Jas. L., Randolph Bldg., Memphis..	Shelby		
DeLoach, A. B., Scimitar Bldg., Memphis..	Shelby	Maury, Jno. M., Memphis Trust Bldg., Memphis	Shelby		
Ellett, C. E., Randolph Bldg., Memphis....	Shelby	Moore, Moore, Memphis Trust Bldg., Memphis	Shelby		
Everett, H. B., Station C., Memphis.....	Shelby	McCown, O. S., Memphis Trust Bldg., Memphis	Shelby		
Edwards, C. W., 488 Laclede Ave., Memphis	Shelby	Mann, Robt., Goodwyn Inst., Memphis....	Shelby		
Erskine, Alexander (Vet.), Randolph Bldg., Memphis	Shelby	Mason, R. F., Randolph Bldg., Memphis...	Shelby		
Fontaine, Bryce W., Central Bank Bldg., Memphis	Shelby	Malone, Battle, Pres., Rodgers Bldg., Memphis	Shelby		
Francis, E. E., 115 N. Main, Memphis....	Shelby	Manker, R. A., 463 N. Dunlap St., Mem- phis	Shelby		
Farris, H. L., Frisco Hosp., St. Louis, Mo..	Shelby	Meeker, Sidney, 1609 Lamar, Memphis....	Shelby		
French, J. E., Silver City, Miss.....	Shelby	Michie, W. T., Scimitar Bldg., Memphis...	Shelby		
Flippin, S. J., Brunswick.....	Shelby	Maury, R. B., Memphis Trust Bldg., Memphis	Shelby		
Fagin, Robt., Exchange Bldg., Mem- phis	Shelby				
Fagin, Robt., Tenn. Trust Bldg., Memphis..	Shelby				
Fleumer, O. C., Goodbar Bldg., Memphis..	Shelby				

Name	Address	County	
Malone, G. B.,	Memphis Trust Bldg.,		Smith
Memphis		Shelby	
McElroy, J. B.,	Porter Bldg., Memphis	Shelby	
McKinney, Richmond,	Memphis Trust		Smith
Bldg., Memphis		Shelby	
Mitchell, E. C.,	Goodwyn Inst., Memphis	Shelby	
Mitchell, W. W.,	Memphis	Shelby	
Oliver, A. B.,	Tenn. Trust Bldg., Memphis	Shelby	
Owens, Jas. P.,	218 McLemore St., Memphis	Shelby	
Porter, A. R.,	Randolph Bldg., Memphis	Shelby	
Petty, G. E.,	958 S. 4th St., Memphis	Shelby	
Pendergrast, L. H.,	Memphis Trust		Smith
Bldg., Memphis		Shelby	
Price, J. W.,	Memphis Trust Bldg., Memphis	Shelby	
Perkins, P. A.,	Memphis Trust Bldg.,		Smith
Memphis		Shelby	
Pride, W. T.,	Memphis Trust Bldg.,		Smith
Memphis		Shelby	
Posert, Henry, So. Express Bldg.,			Sumner
Memphis		Shelby	
Pistole, W. H.,	Station G., Memphis	Shelby	
Ragsdale, W. E.,	218 McLemore St.,		Sumner
Memphis		Shelby	
Raines, N. F.,	Court House, Memphis	Shelby	
Rudisill, A. W.,	1047 Patton, Memphis	Shelby	
Rogers, W. B.,	Rogers Bldg., Memphis	Shelby	
Rosamond, Eugene,	Byrd Bldg., Memphis	Shelby	
Rucker, S. T.,	935 Raleigh Memphis	Shelby	
Sinclair, A. G.,	So. Express Bldg., Memphis	Shelby	
Summers, C. K.,	Exchange Bldg., Memphis	Shelby	
Sauls, D. K.,	174 S. Main St., Memphis	Shelby	
Smythe, F. D.,	Porter Bldg., Memphis	Shelby	
Stanley, J.,	Byrum, Randolph Bldg.,		Smith
Memphis		Shelby	
Stephenson, M. P.,	15 Madison Heights		Warren
Court, Madison Ave., Memphis		Shelby	
Schultz, M. A.,	40 W. Iowa Ave., Memphis	Shelby	
Sibley, S. J.,	752 McLemore, Memphis	Shelby	
Smith, W. H.,	256 Randolph Bldg., Memphis	Shelby	
Somerville, W. G.,	Central Bank, Memphis	Shelby	
Simpson, F. L.,	Randolph Bldg., Memphis	Shelby	
Turner, B. F.,	Odd Fellows Bldg., Memphis	Shelby	
Thornton, G. B. (Vet.)	150 Court Ave.,		Warren
Memphis		Shelby	
Thomas, J. P.,	Tenn. Trust Bldg., Memphis	Shelby	
Toombs, P. W.,	Exchange Bldg., Memphis	Shelby	
Thorn, S. W.,	892 Louisiana Ave., Memphis	Shelby	
Taylor, Neumon,	964 New York Ave.,		Warren
Memphis		Shelby	
Taylor, W. W.,	Randolph Bldg., Memphis	Shelby	
Terrell, S. D.,	201 S. Cooper, Memphis	Shelby	
Underwood, Robt. B.,	325 Carroll St.,		Warren
Memphis		Shelby	
Vaughan, J. A.,	Goodwyn Inst., Memphis	Shelby	
Van Horn, J. A.,	Miami, Fla.	Shelby	
Venn, J. H.,	Scimitar Bldg., Memphis	Shelby	
Williams, A. B.,	Randolph Bldg., Memphis	Shelby	
White, C. A.,	Tenn. Trust Bldg., Memphis	Shelby	
Watkins, E. D.,	Memphis Trust Bldg.,		Warren
Memphis		Shelby	
Watkins, H. C.,	Lee Bldg., Memphis	Shelby	
Wolff, H. S.,	So. Express Bldg., Memphis	Shelby	
Wadley, S. L.,	Randolph Bldg., Memphis	Shelby	
Wadlington, W. J.,	Randolph Bldg.,		Warren
Memphis		Shelby	
Webb, W. S.,	521 S. Front St., Memphis	Shelby	
Wallace, W. R.,	958 So. 4th St., Memphis	Shelby	
Williamson, W. L.,	Goodwyn Inst., Memphis	Shelby	
Walton, J. M.,	901 N. 3rd St., Memphis	Shelby	
West, H. A.,	Memphis	Shelby	
White, R. L.,	2109 Harbert, Memphis	Shelby	
Winston, A. L.,	Alamogordo, N. M.	Shelby	
Alexander, M. N.,	Pleasant Shade	Smith	
Beasley, J. J.,	Pleasant Shade	Smith	
Beasley, Isham,	Dickson Springs	Smith	
Bridges, J. G.,	New Middleton	Smith	
Campbell, J. S.,	Gordonville	Smith	
Chism, J. H.,	Carthage	Smith	
Crockett, W. M.,	New Middleton	Smith	
Donoho, C. H.,	Difficult	Smith	
Hugh, B. J.,	Secy., Elmwood	Smith	
Hargis, F. C.,	Chestnut Mound	Smith	
Key, R. E.,	Pres., Monoville	Smith	
King, A. H.,	Chestnut Mound	Smith	
King, R. W.,	Gordonsville	Smith	
Robins, C. D.,	Gordonsville	Smith	
Swope, Frank,	Carthage	Smith	
Parker, R. T.,	Dixon Springs	Smith	
White, J. A.,	Carthage	Smith	
Allen, W. T.,	Pres., Gallatin	Sumner	
Appling, W. B.,	Portland	Sumner	
Dorris, W. B.,	Gallatin	Sumner	
Dotson, W. S.,	Secy., Gallatin	Sumner	
Dunklin, F. H.,	Gallatin	Sumner	
Galbreath, B. S.,	Hendersonville	Sumner	
Hobdy, F. E.,	Brackentown	Sumner	
Lacey, W. N.,	Gallatin	Sumner	
McNeil, J. H.,	Mitchellville	Sumner	
Parker, Jno. R.,	Gallatin	Sumner	
Peeden, E. F.,	Portland	Sumner	
Reece, Homer,	Gallatin	Sumner	
Woodson, L. M.,	Gallatin	Sumner	
Wright, T. E.,	Bethpage	Sumner	
Edwards, C. P.,	Erwin	Unicoi	
Tilson, L. S.,	Erwin	Unicoi	
Williams, G. C.,	Pres., Erwin	Unicoi	
Hensley, T. C.,	Erwin	Unicoi	
Woodard, W. T.,	Secy., Erwin	Unicoi	
Sams, W. A.,	Unicoi	Unicoi	
Burger, Thos. O.,	Secy., McMinnville	Warren	
Cantrell, Q. C.,	Pres., McMinnville	Warren	
Copenhaver, H. V.,	Rock Island	Warren	
Cummings, V. B. (Vet.),	Rowland	Warren	
Farrar, H. C.,	Hillsboro	Warren	
Fisher, G. C.,	Dibrell	Warren	
Mooneyham, E. L.,	Rock Island	Warren	
Northcutt, E. E.,	McMinnville	Warren	
Ramsey, A. B.,	McMinnville	Warren	
Reynolds, Herman	Viola	Warren	
Seitz, Albert,	McMinnville	Warren	
Trail, A. J.,	McMinnville	Warren	
Wheat, L. E.,	Cottontown, R. F. D.	Warren	
Akers, R. M.,	Laurel Bloomery	Washington	
Arnold, J. F.,	Limestone	Washington	
Brabson, C. W.,	Limestone	Washington	
Bolton, R. S.,	Johnson City	Washington	
Broyles, C. J.,	Johnson City	Washington	
Campbell, G. E.,	Elizabethton	Washington	
Cox, J. W.,	Secy., Johnson City	Washington	
Carroll, C. T.,	Johnson City	Washington	
Dulaney, W. R.,	Jonesboro	Washington	
Jones, J. H.,	Garbers	Washington	
Kennedy, W. T.,	Johnson City	Washington	
Long, E. A.,	Johnson City	Washington	
Lewis, A. I.,	Laurel Bloomery	Washington	
Matthews, W. J.,	Johnson City	Washington	
Miller, H. D.,	Johnson City	Washington	
Panhorst, M. H.,	Jonesboro	Washington	
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Randall, J. P.,	Johnson City	Washington	
Reeves, W. R.,	Jonesboro	Washington	
Sells, G. J.,	Johnson City	Washington	
Smith, C. E.,	Johnson City	Washington	
Sutton, J. R.,	Elk Park, N. C.	Washington	
Stallard, W. W.,	Dunganon, Va.	Washington	
Trigg, Daniel,	Johnson City	Washington	
Taylor, W. S.,	Milligan	Washington	
West, E. T.,	Johnson City	Washington	
Wallace, J. W.,	Watauga	Washington	
Wingo, T. B.,	Martin	Weakley	
Biggs, V. A.,	Martin	Weakley	

Name	Address	County	Name	Address	County
Young, J. C., Martin		Weakley	Richards, A. F., Secy., Sparta	.....	White
McKay, R. F., Pres., Martin		Weakley	Smith, R. E. L., Doyle	.....	White
Hammings, H. V., Martin		Weakley	Young, W. B., Clifty	.....	White
Sawyers, T. E., Martin, R. F. D.		Weakley	Cochran, H. P., Franklin	.....	Williamson
Scales, D. W., Martin		Weakley	German, Dan, Jr., Franklin	.....	Williamson
Little, R. M., Secy., Dresden		Weakley	Graham, W. W., Arno	.....	Williamson
Mayo, B. S., Dresden		Weakley	Greer, J. W., Thompson Station	.....	Williamson
Finch, J. B., Dresden		Weakley	Howlett, K. S., Secy., Franklin	.....	Williamson
Parrish, B. B., Dresden		Weakley	Nolen, B. F., Franklin	.....	Williamson
Shannon, J. D., Greenfield		Weakley	Oden, S. F., Brentwood	.....	Williamson
Thomas, G. C., Greenfield		Weakley	Paschal, G. C., Arrington	.....	Williamson
Elinor, T. Z., Greenfield, R. F. D.		Weakley	Shannon, J. O., Pres., Franklin	.....	Williamson
Tatum, I. J., Glenson, R. F. D.		Weakley	White, S. W., Franklin	.....	Williamson
Shannon, E. J., Sharon		Weakley	Bratton, Thos. O., Pres., Lebanon	.....	Wilson
Baker, R. F., Sparta		White	Bone, James R., Secy., Lebanon	.....	Wilson
Breeding, W. J., Ravenscroft		White	Davis, J. L., Watertown	.....	Wilson
Bradley, A. A., Eastland		White	Eskew, A. O., Lebanon	.....	Wilson
Brock, W. L., Sparta		White	Edgerton, H. K., Lebanon	.....	Wilson
Cantrell, W. B., Pres., Cassville		White	Landis, P. K., Lagnardo	.....	Wilson
Cotton, L. D., Sparta		White	Lillard, R. Q., Lebanon	.....	Wilson
Earles, P. H., Sparta		White	McFarland, J. J., Lebanon	.....	Wilson
Gaines, S. E., Sparta		White	Oldham, D. P., Mt. Juliet	.....	Wilson
Gott, J. R., Clifty		White	Rhea, B. S., Lebanon	.....	Wilson
Gist, D. R., Sparta		White	Tilley, L. L., Lebanon	.....	Wilson
Johnson, W. M., Ben Air		White	Weaver, J. M., Mt. Juliet	.....	Wilson
Lewis, P. K., Doyle		White	Young, C. V., Lebanon	.....	Wilson
Lewis, V. L., Crossville		White	Lamb, E. K., Franklin, Ky.		Macon
Mason, E. C., Ravenscroft		White			

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SPINA BIFIDA.*

BY B. B. CATES, M.D., KNOXVILLE, TENN.

In September, 1907, I read a paper before the East Tennessee Medical Society at Knoxville, Tenn., on the subject of "Spina Bifida." This paper was subsequently published in the Boston Medical and Surgical Journal. In that Journal I reported three cases of spina bifida operated on, with one death. Since publishing that paper I have operated on four other cases, with one death, making a total of seven operations, with two deaths, a mortality of 26.7.

There were five males and two females. The ages varied at the time of operation from twenty-eight days to twenty-six years. The situation of the tumor will be seen by reference to the following table:

	Tumor	Location	Sex	Age	Result	Cause of Death	Complications	Late Results
No. 1.	Meningocele	Mid-Sacral	Male	10 Mo.	Cured		None	Good
No. 2.	Meningocele	Lumbo-Sacral	Male	3 Mo.	Died	Septic Meningitis	None	
No. 3.	Meningocele	Cervical	Female	2½ Mo.	Cured		None	Hydrocephalus
No. 4.	Meningo-myelocoele	Cervical	Female	7 Mo.	Died	Paralysis Heart and Respiration		None
No. 5.	Meningocele	Cervical	Male	28 Days	Cured		None	Strabismus
No. 6.	Meningocele	Lumbar	Male	2 Mo. 9 days	Cured		Spina B. in Occulta in upper dorsal	Hydrocephalus Paralysis in lower limbs
No. 7.	Meningocele	Upper Sacral	Male	26 Year	Cured			Good

All the tumors were meningoceles except one in a female in the cervical region, which

was a meningo-myelocoele in a female child seven months old. This child died suddenly when I attempted to push back the cord elements into the spinal canal. One tumor in the lumbar region contained nerve elements which were pushed back into the canal. One child, a male with a sacrolumar tumor, lived two weeks and died of septic meningitis, all the tissues having sloughed.

Now, it may be worthy to note, two mothers bore three spina bifida children with the tumors in the cervical region. Both mothers had pellagrous symptoms. One, the mother of the child with meningo-myelocoele (No. 4) afterwards died of pellagra. One mother with pellagrous symptoms gave birth to two children with tumors in the cervical region. One, a girl (No. 3),

lived three months and died of broncho pneumonia, not, however, before developing hydrocephalus. Two years later this woman bore a male child (No. 5) with a

* Read before the Tennessee State Medical Association, April, 1911, Nashville, Tenn.

tumor in the cervical region. This child is living and thriving, twenty months after operation, though it shows a slight strabismus. Another mother, who bore a boy (No. 6) with tumor in the lumbar region, had Graves disease before she conceived, while carrying her child and since delivery. Her symptoms are somewhat improved of late. The family histories of the other patients were good, except in the case of the man who showed evidence of cancer in his family, his mother and two maternal aunts having died of cancer.

These histories may be inconsequential or they may be deeply significant. It remains to be seen if other clinicians will corroborate or refute our observations. The case of most value to us in the report of these operations is the man who carried his tumor for so many years before submitting to radical means for relief. It is of importance, since it shows a patient may carry such a defect for years with comparative good health, and, more, because the patient was old enough and intelligent enough to describe his sensations before the operation, during his convalescence and after his recovery. It also illustrates the danger of putting off operations until necessity forces the patient to submit to operation under unfavorable circumstances, the possibility of septic infection following a leak from a trauma or slough.

Again, it may be deserving to study carefully the history of this patient, which we will attempt to elaborate more fully when we narrate the story of his life, since it may be of interest by reason of the effects of pressure in the lower part of the spinal column, of such defects upon the genital organs and the rectum.

It also makes clear the futility of tentative measures for the relief of like conditions and the good results following the radical operation. Besides, this case may be unique in respect to the large amount of cerebro-spinal fluid he lost without disastrous consequences, showing the influence of the cerebro-spinal fluid on blood pressure, temperature and pulse. The tumor in this

patient measured nine and one-half inches in the sagittal diameter and eight and one-half inches in the transverse diameter, and from this tumor at the time of the operation there was evacuated approximately ten to twelve ounces of fluid; some was lost. I calculated the sac must have held a scant pint. The reason he submitted to operation was that in 1910 he injured his tumor, which subsequently sloughed, allowing the fluid to run out. This discharge kept up for six weeks. That is to say, after discharging it would stop two or three days and continue two or three days. In October of the same year the tumor began hurting and again burst and discharged at intervals for eight weeks, the same as in the first instance. The amount of cerebro-spinal fluid lost would stagger the imagination. His wife—a sensible woman—claimed during the accumulation period the tumor would enlarge more than half the original size. Basing the capacity of the tumor on the amount of fluid withdrawn at the operation, which has already been considered a scant pint, a fair estimate of total fluid discharged at both series of eruptions, allowing three days to discharge and three days to accumulate (making due allowance for any discrepancy as to fullness of tumor and arbitrarily fixing the interval accumulation at four ounces; it would perhaps be nearer the truth to say eight ounces), it would be forty ounces in the first series and forty-eight ounces in the second series. This, added to what was drawn away at operation, will total one hundred and four ounces, and does not take notice of what dribbled away in the intervals of eruptions and accumulations. The wound would leak for twenty-five days following the operation, often saturating large, thick pads, necessitating frequent changes during the day. It may be of interest to remark that while the loss of cerebro-spinal fluid had considerable influence on the blood pressure, it is doubtful if it influenced the temperature to any extent. That while the temperature never went above 99 1-5 degrees, and the greater part of the time was below normal; often-

times 96 degrees, with a pressure ranging between 74 and 100 M. M. The temperature would also be normal with a pressure of 65 M. M. It was also noted on the eleventh day following the operation that the temperature registered 96 degrees and the blood pressure 200 M. M. The pulse underwent many vagaries and did not seem influenced so much in the frequency of the beat and by the variations of the temperature and blood pressure as in the force of the heart action. The strength of the pulse was markedly reduced, being exceedingly soft and easily compressed. It is well in this connection to state that during the time the flow was at its height the muscular power of the patient was greatly reduced, he being so weak he could hardly move.

HISTORY OF CASE NO. 7.

M. R., man, white, age 26, cab driver. His father was killed at forty-five; his mother died at forty of cancer of the uterus. Also two aunts died of cancer of the uterus. Two brothers and one sister living and in good health. Two sisters were killed. He was born with a tumor over the sacrum. Had fever six years ago. With that exception, has been well all his life.

PERSONAL HISTORY.

Short, stout man; well developed, except the tumor over the sacrum; the tumor always hurt; he always had pains in his lower limbs, of a dull character and several times a day; shooting pains would dart down the limbs. His lower limbs were weak; the left was weaker than the right. He could not stand long on his legs. He also had dull, constant pains in the penis, alternating with darting pains; and, while married, only at long intervals would he attempt marital relations, which were unsatisfactory and oftentimes a failure. Every few days he had diarrhoea; at times he had involuntary discharges. In January, 1910, he had a fall on his tumor, which subsequently sloughed, allowing the contents to run out. This discharge kept up every two or three days for six weeks.

October 13, 1910, his tumor commenced

to hurt and he had intense headache. The pains were relieved by the bursting of the tumor and discharge of fluid. This interval flow, like in the first instance, kept up till about a week before his operation on December 10, 1910. Each time the tumor filled up he had headaches and cramps in his legs, which would disappear with the flow of fluid. The flow beginning to check up, six days before the operation I injected a medicine dropper filled with tincture of iodine. Almost immediately he went into collapse with severe headache and cramp in his legs. He did not recover for two days. However, it stopped the flow and in six days filled to its original size.

PRESENT STATUS.

The patient is well, works every day and enjoys good health; eats and sleeps well; is free from pain; has absolute control over his bowels; performs conjugal relations in a successful manner. In fact, is a normal, happy man.

REMARKS.

I would call attention to a step in the technique of the operation which concerns the closure of the spinal defect with osteoplastic grafts. In not one of my cases was there enough bone at hand to cover the opening, so I used the deep fascia by dissecting enough from without inwards to cover over the defect when turned over the middle line. This fascia is strong and dense enough to form a strong bridge. It is not necessary to overlap the flaps, simply stitching the edges together with fine catgut being all that is necessary. Indeed, I think by imbricating the flaps, thus cutting off the blood supply, I caused necrosis in one of my cases.

TUBERCULOSIS OF THE SPINE.

(Pott's Disease.)

BY A. G. NICHOL, M.D., NASHVILLE, TENN.

Tuberculosis of the spine is a highly destructive process primarily involving the bodies of the vertebrae, the history of which dates far back. It was known to the

ancients, being mentioned by Hippocrates and Galen, who attributed its cause to tubercle "within and without the lung." In later years Ambroise Pare wrote of it and made use of a metal cuirass in its treatment. In America this disease existed in pre-historic times, which is amply proven by a specimen in Peabody Museum in Cambridge. The earliest accurate description of this condition, however, was given in 1779 by Percival Pott, in honor of whom the disease has been named.

Spinal tuberculosis is a chronic destructive process affecting chiefly the bodies of the vertebrae. The bodies are softened and collapsed, causing the spine to bend upon itself into what is commonly known as "hump-back." Formerly all conditions, such as syphilis, malignant disease, aneurysmal corrosion, etc., causing kyphosis, were classed as Pott's disease, but at the present time only those kyphoses due to tubercular infection are so classed.

Etiology.—Three etiological factors are recognized in the production of a tubercular lesion—first, the infectious element; second, the general predisposition; and, third, the local conditions that favor the reception and growth of the bacilli. The essential cause or infectious element is, of course, the tubercle bacillus.

Predisposition, both general and local, is lessened vital resistance. General predisposition may be inherited or acquired.

Heredity.—The history of tuberculosis in the immediate family of an individual is generally supposed to lessen the resistive power of that individual to this form of disease. It has been variously estimated as to what per cent of cases give history of an hereditary taint. Whitman says that approximately 25 per cent will give unquestionable history of closely related tuberculous individuals. Gibney found hereditary taint in 76 per cent of 185 cases, whereas Taylor found 15 per cent in 845 cases and 19 per cent in which so-called scrofula was given. Vulpus gave only 16 per cent in a series of 810 cases. These estimates vary greatly, and I doubt not that

this marked difference may be in a measure accounted for in the great difficulty and often inability to obtain an intelligent history. Were it possible in all cases to obtain an accurate history, the percentage would undoubtedly be very high.

Acquired Predisposition.—Pre-existing diseases, such as measles, whooping cough, etc., lessen the general vital resistance, and the individual, being thus weakened, is more liable to have engrafted upon him a tuberculous process.

Constant association with a tuberculous individual will entail great risk of infection.

Poor food, improper hygiene and scanty clothing are important predisposing factors. For this reason the disease is more commonly found in the lower classes.

Local Predisposition.—Local conditions that favor the reception and growth of the bacilli may be induced by injury, and often the history shows the injury to have been slight—only sufficient to have brought about a slight disturbance in the cancellous tissue, inducing a local congestion in the effort of nature to repair and furnishing a soil suitable for the lodgment and development of the bacilli. This has been experimentally proven by Kraus and is supported by clinical evidence. In a series of 3,398 cases reported by Hildebrand, Koenig, Mikulicz and Bruns, 513 (16.5 per cent) Mikulitz and Burns, 513 (16.5 per cent) Vulpus give a much higher percentage in two series of 845 and 810 cases, respectively, in which each gives 53 per cent.

Seat of Infection.—42.5 per cent of all cases of joint tuberculosis treated at the Hospital for Ruptured and Crippled were of the spine, while of those cases treated at the Children's Hospital 51.4 per cent were spinal. These figures show Pott's disease to be the most common form of joint tuberculosis, the next in frequency being the hip. The area of the spine most often affected seems in direct proportion to its susceptibility to injury, and the most common seat of the disease is in the lower dorsal; next in frequency, the upper lumbar,

upper dorsal, lower lumbar and cervical, in the order named. Julius Dollinger, of Budapest, in 538 cases was able to ascertain the site of primary focus as follows: 12th dorsal, 1st lumbar, 10th dorsal, 11th dorsal, 2nd lumbar.

Sex.—Sex seems to exercise little influence, it occurring slightly more often in the male. Gibney, Fischer, Bradford and others give 53.9 per cent in the male. Frank and Gunter give 52 per cent.

Age.—Eighty-five per cent of all cases of Pott's disease occur in the first decade of life and 50.2 per cent occur between the ages of 3 and 5 years, showing it to be more common in middle childhood. However, it may occur at any age from early infancy to old age. The youngest case treated at the Hospital for Ruptured and Crippled is 2 months, while the oldest is 71 years.

Pathology.—The initial point of infection is in the anterior part of the body of the vertebrae, beneath the fibro-periosteal layer of the anterior longitudinal ligament. It first appears as a minute hyperemic spot. When the bacilli are first deposited in the bone their toxins cause a proliferation of the fixed tissue cells around the bacilli, and about these a ring of leucocytes form. The bacilli, together with the proliferated cells and a few giant cells surrounded by leucocytes, constitute the original tubercle. The disease progressing, the central cells around the bacilli increase in number, and, being deprived of sufficient nourishment and poisoned by toxins, die and are disintegrated into granular material (caseation); the appearance changes to a yellowish color. The bacteria increase in number and escape into the surrounding tissue, and other tubercles are formed, undergoing a similar process, coalescing as the disease area enlarges. While this process is in progress the surrounding tissue becomes congested as the result of irritation, and the fixed cells become organized, or partly so, into feeble, ill-nourished granulations, representing the effort on the part of nature to shut out and expel the products of disease. Should the resistance be sufficiently

effective, the diseased area may be encapsulated by further organization of the fixed cell, which will surround and destroy the organisms, replacing the diseased focus by fibrous tissue; hence a natural cure. However, in most instances the disease progresses toward the point of least resistance, and usually makes its way into the articular cartilages, which disintegrate and allow extension to adjacent vertebrae. This process may extend indefinitely and involve a number of vertebrae. The process may extend postero-laterally and involve the lamina or posteriorly into the spinal canal, infecting the meninges and possibly causing paralysis; these last two courses, however, are not usual.

When the vertebrae becomes sufficiently affected to weaken its stability the spinal column bends upon itself, causing angular curvature backward, slight in the beginning, and increasing with the progress of the disease. The most prominent spinous process indicates usually the primary seat of disease.

The inter-vertebral discs between diseased vertebrae are disintegrated and disappear.

The transverse and spinous processes are seldom affected.

The deformity varies in direct proportion to the extent and area affected. When a number of vertebrae are involved the kyphosis is more general, but with only a small area the posterior angularity is more acute.

Abscess.—In a considerable proportion of cases of tuberculous disease of the spine no abscess is recognized during life, but in cases seen at autopsy an abscess is almost invariably found, although it may be of small size. The tuberculous material early pushes up the prevertebral ligaments and forms a flattened, soon a nodular swelling in front or sometimes at the side of the vertebrae. The contents of such swellings are similar to the contents of other tuberculous abscesses (Nichols). In some cases the formation of tuberculous pus is a characteristic from the beginning. In such cases

abscesses are likely to be a prominent feature.

The tuberculous fluid during or after the destruction of the vertebral body forces itself into the surrounding tissues and burrows toward the point of least resistance, most often along muscular sheaths. In some instances gravity seems to influence the direction of pointing. The location of the abscess necessarily depends upon the original site of disease. In upper cervical disease the abscess points in the pharynx; mid-cervical upon the side of the neck; lower cervical and upper dorsal posteriorly or in the axilla; mid-dorsal in the back; or perforates anteriorly into the lung; lower dorsal and lumbar appears either in the abdomen or travels downward along the sheath of the psoas muscle, pointing in the groin.

Paralysis.—In a certain number of cases meningitis and myelitis are present in the membranes and cord opposite the seat of disease, accompanied sometimes with what is virtually destruction of the cord at this point. The paralysis is seldom the result of direct bone pressure, it being uncommon for even marked kyphoses to narrow the spinal canal to any extent. Paralysis sometimes occurs before deformity and recovers while the deformity is increasing. In many cases of extreme deformity there is no evidence of paralysis at all. In 52 cases of deformity in literature collected by Schmaus, compression was noted in 39; in 33 of these a caseous pachy-meningitis was present; in 6 bony pressure existed, and in 5 of these the odontoid process was dislocated. In only one was the kyphosis the cause of the pressure. Kraske estimates that about 2 per cent of paralyzes of Pott's disease are due to bony pressure. Compression from thickened membranes, generally tuberculous in nature, is usually the cause. Myelitis, however, may exist in the cord in the early stages; this is not to be demonstrated as tuberculous by the microscope.

Various circulatory changes may occur in the cord from oedema to true inflammation; this, with thrombosis and embolism,

must be considered as possible factors in contributing to the disturbance in the cord.

Symptoms.—When a case of Pott's disease first comes under observation it has usually existed for some time, as the process is in most instances of slow onset and its development gradual. The primary and diagnostic symptoms are present before deformity appears, and may be classed as follows: Stiffness, pain, weakness, awkwardness and deformity.

One of the earliest signs present in tuberculous disease of the spine is stiffness or rigidity of the spinal muscles. Stiffness of the spine is, in part, voluntary, inasmuch as the patient adapts his movements and attitudes so as to lessen or avoid pain, preventing as far as possible jars and strains. The essential and characteristic stiffness of Pott's disease is caused by involuntary contraction of the muscles about the seat of disease; this may fix the spine or only be evident at the extremes of motion. This sign is always present, preceding deformity, and persisting until cure is effected, thus being of greatest diagnostic importance.

Pain.—In a certain number of cases of Pott's disease pain is absent altogether, but this is not the rule, it being usually present and sometimes occurs as a prominent and persistent symptom. The characteristic pain of Pott's disease is not located in the back, at or near the seat of disease, but is referred to the distal extremities of the nerves, emerging between the affected vertebrae, consequently pain may be experienced in the form of earache, stomach ache, sciatic or in the limbs.

This pain is not usually constant, but is induced by jars, sudden or unguarded movements. It is often worse at night, when, after the relaxation of the muscular tension that has protected the part, that the unconscious movements during sleep cause pain or discomfort, the child moaning, restless, often crying out in sleep—night-cry.

Tenderness.—Sensitiveness to pressure on the spinous processes is unusual, which can be readily understood when we consider the location of the actual disease, it being

in the bodies and not palpable. Palpation is not of any diagnostic value except in the cervical region.

Weakness.—Evidence of weakness is manifest in the effort on the part of the patient to rest and protect the spine. In very young subjects you may have loss of walk, refusal to stand and desire for support.

Attitude.—The attitude assumed by a patient varies with the region involved, and is due to both voluntary and involuntary muscular tension. In the upper cervical the characteristic pose is that of wry-neck. In the lower cervical and upper dorsal the chin is somewhat raised, and the spine abnormally straight or slightly curved forward below the seat of disease. In mid-dorsal, elevation of the shoulders is observed. In the lower dorsal and lumbar a marked lordosis occurs, the patient leaning backward, as would a pregnant woman.

Deformity.—The deformities occurring may be classified as bony, muscular and compensatory. Bony deformity is the result of destruction of the vertebral bodies, allowing the spine to bend upon itself by crushing the diseased bone. The extent and angularity of the kyphosis is dependent upon the number of vertebrae involved—the smaller the number the more acute the angularity. Muscular deformity is distortion due to muscular spasm; of this wry-neck in cervical and psoas contraction in lumbar disease are familiar examples. Compensatory deformity signifies the general effect of local distortion upon the spine as a whole. Thus, an angular projection in any direction must be balanced by an opposite curvation so as to protect the equilibrium.

General Symptoms.—There is usually present a slight evening rise of temperature in the active stages of the disease, or when an abscess approaches the surface, amounting to from 1 to 3 degrees. The positive value of this symptom is doubtful in early and quiescent cases. Increased pulse rate corresponds to the temperature or may be slightly more rapid.

Examination.—In examination the patient should be stripped of all clothing and the general attitude noted; the characteristic walk is gliding, each step being taken with deliberation, walking upon the ball of the foot, thus preventing jar.

Stooping.—These patients, when stooping to pick an object from the floor, do not bend forward, flexing the spine, but, holding the spine rigid, the legs and thighs are flexed, so as to be enabled to reach the floor.

Turning.—Should the patient's attention be attracted from behind, the entire body will be turned rather than the head alone.

Sitting.—In sitting you find the individual sitting well forward in the chair, often supporting the weight with the hands resting upon the seat. In marked cases the child may be unable to stand without support, and is often found lying around on his belly, and, when attempting to rise, will grasp some object for support. In cervical disease the child, when sitting, will support the chin in the hands, relieving the pressure from the cervical bodies.

Spinal rigidity may be demonstrated by laying the child prone upon a table, fixing the chest and raising the body by the lower extremities, when you find that, instead of the spine bending in a gentle curve, as is normal, it will remain rigid and straight. In a small child this may be brought out by laying the child upon its belly across the hands.

Psoas Contraction.—This may be demonstrated by placing the patient upon his back, with buttock over the edge of the table, fixing the body, and noting the difference in the extension of the thighs.

Differential Diagnosis.—Torticollis, congenital exists from birth, absence of pain and very unlikely to be confounded with Pott's disease. Rheumatic torticollis, acute in onset, pain severe and persistent, clearing up upon the administration of salicylates.

Malignant disease is usually secondary to a focus elsewhere, rapid in course, associated with constitutional signs that will

obviate error. Vaccination with tuberculin is usually reliable, especially if the subcutaneous method is used. This method is, however, not always applicable in very young subjects, when the cutaneous method must be resorted to, but is not as reliable as the former method. Ophthalmic test is not advisable, as it may produce trouble in the eye. X-ray in advanced cases will demonstrate the irregularity of the spine and is of great value in many instances.

Prognosis.—The absolute mortality of Pott's disease cannot be accurately estimated, but it is stated by Whitman that at least 20 per cent of all patients die during the progress of the disease, and within a few years after its onset, from causes directly or indirectly dependent upon the local lesion. The direct causes of death may be stated as exhaustion following mixed infection, amyloid degeneration of the internal organs, and intercurrent affections, that are fatal because of the devitalizing influences of the pre-existing disease. Prognosis in an individual case is influenced by many conditions. Should family history be good, surroundings favorable, patient in good physical condition and the disease in the early stage, we would scarcely expect a fatal termination. Should the circumstances be opposite, the prognosis would be more grave. In a few words it may be said that the prognosis depends upon history, condition, stage of disease and conscientious and persistent treatment.

Prognosis as to deformity depends largely upon the condition existing when treatment is instituted and thoroughness of that treatment.

In untreated cases it is impossible to estimate the number that succumb to the ravages of this affection; still we almost daily see "hunch-backs" whose vitality has weathered the storm. These cases are cured by nature's efforts and have a permanently ankylosed spine.

Treatment.—At present the treatment of Pott's disease is far more satisfactory than in former years. This advancement is largely due to Lou's Sayre, C. F. Taylor and

others, whose ingenuity and application of mechanical principles have done much toward giving the spine physiological rest and assisting nature in controlling the progress of the disease. In the beginning of treatment one should record conditions present, and especially the degree of deformity, the increase or diminution of which is a fair index as to the progress of the case. This record is very satisfactorily obtained by moulding to the spine a lead tape, after which the tape can be laid edgewise and a tracing made on cardboard. Treatment necessarily varies with the condition present in the individual case, but under all conditions the same principles apply—physiological rest, protection and constitutional support.

In acute and progressive cases recumbency is most efficient, while those of the sub-acute and convalescent varieties may be satisfactorily treated by the ambulatory method. Recumbent treatment is most efficiently carried out by the Bradford gas-pipe frame, which is simple in construction and obtainable anywhere. The frame is rectangular in shape and made from ordinary gas pipe. Four pieces of gas piping are threaded at each end, and these ends are attached to each other at the four corners by four elbows. The length of the frame is the length of the patient, with an addition of four inches. The width is the distance between the axillary lines or slightly less. The frame is covered with a stout cotton cloth extending not quite the length of the frame and one and three-quarters around, so that buckles or webbing may be applied to tighten. A number of other details might be mentioned, but this description will give a general idea as to its construction.

The patient is placed recumbent on this frame and fixed by bands about the shoulders, pelvis and lower limbs, so that the spine may be absolutely at rest. Upon either side of the deformed area may be placed felt pads varying in thickness according to conditions; as the deformity decreases, hyper-extension may be obtained

by bending backward of the frame opposite the deformity. While thus treated, the patient each day must be released from the frame and gently turned on the side, so that the back can be cleansed and rubbed with alcohol; this will avoid to a great extent annoying erosions. The great advantages of this frame are obvious, the patient may be carried from place to place about the house without pain and inconvenience. In suitable weather the frame may be fitted to a baby carriage or a hospital carriage and rolled out in the open, the patient receiving the benefits of fresh air and sunshine without effort. In upper dorsal and cervical disease extension may be made when necessary by attaching the apparatus to the head of the frame.

After the acute condition has subsided, ambulatory treatment may be used. Probably the most convenient and most generally used method is that of plaster of Paris jacket. In application of a plaster jacket several principles must be observed, otherwise the results are not altogether satisfactory. Patient should have all superincumbent weight relieved. This may be accomplished by suspension either with Sayre headpiece or a modified Barton's bandage. Patient should not be suspended in midair, but only so high as to relieve the spine of weight when the patient's toes should barely touch the floor. Having previously put upon the patient a thin webbing shirt with no buttons, and all bony prominences padded, the plaster is applied rapidly and smoothly, using the pelvis as a base and gradually covering the trunk up to the axillary folds, and in cases of upper dorsal and cervical disease, the cast may extend even higher on to the neck and occiput, leaving an ample window for the face. In lieu of the head bandage you may cover the trunk and incorporate the jury-mast within the plaster. For a number of years the dinner pad was considered essential, but this has been discarded by many as not only cumbersome, but unnecessary. The plaster jacket may be applied in recumbence by laying the child prone upon a hammock frame and after the

plaster has dried the hammock cloth is cut away at the upper and lower margins of the cast. All casts should be trimmed smoothly to conform to the axillary and inguinal folds, so that the patient will not experience discomfort. After the cast has thoroughly dried it is well to apply a good coat of varnish, which will render the cast less pervious to moisture and lengthen the period of its efficiency. Casts must be renewed at intervals as occasion demands. A plaster cast may be converted into a removable one by softening the middle line of the back into a hinge and cutting the jacket down the middle line of the front and attaching to the cut edges eyelets or hooks, so that the jacket may be removed and reapplied. This procedure lessens the efficiency of the jacket and should be used only in convalescent cases. Similar corsets may be fashioned of celluloid, leather, aluminum, paper-mache, etc.

Fixation in sub-acute and convalescent cases may also be accomplished by various steel appliances, the most commonly known of which is the Taylor spinal brace and its modifications; these appliances carry out the same principles as the plaster cast, and have the advantage of being able at all times to inspect the seat of deformity and constant opportunity to correct the slightest misplaced force.

In skilled hands the brace offers much, but to the less experienced the plaster of Paris jacket is the preferable treatment.

In cases where the disease is situated high up head supports are necessary; this is accomplished by leather celluloid collars or head appliances of various designs.

Correction of Deformity—During active and convalescing stages the deformity may to a great extent, if not entirely, be overcome by methods already described, but later when cicatrization and ankylosis have occurred, it is as a rule unwise to use forcible measures. Forcible correction of deformity of Calot, revived by Chipault, has been almost abandoned as attended with too great risk of hemorrhage, rupture of the pleura, rupture of abscess and fracture of

the spine as well as paralysis. In 610 cases reported, 21 deaths occurred as a direct result of the operation. The consensus of opinion today is to let well enough alone and be content with a cure with deformity. A moderate degree of manual force is at times beneficial and likewise suspension of a patient daily in Sayre's appliance continued for some time may be attended with some dissipation of the deformity.

Operation upon diseased vertebrae, for drainage and removal of dead bone, becomes necessary in some cases, but owing to the location of the vertebral bodies and difficulty of access, the operations have been attended with little success.

Treatment of Abscess—Abscess may be treated expectantly or by operation. Expectantly under proper treatment small and early abscesses may be absorbed. Fixation of the spine in recumbency, open air both day and night improve general condition and favor absorption of the abscess. Aspiration is temporization, and only diminishes the size of the abscess and does not render absorption more probable.

Operation—When abscess inconveniences patient, enlarges rapidly or for any other reason seems to injure the individual, incision is to be considered. Incision should be made after thorough asepsis is assured, contents of the abscess evacuated and cavity cleansed and sterilized as far as possible. At this point two procedures are open to the operator, either close by one or more layers of sutures, without drainage, or if this does not coincide with the surgeon's judgment the cavity should be packed and drainage used. Should infection with pyogenic micro-organisms occur, the gravity of the condition greatly increases.

Paralysis—Occurring as a complication, was present in 218 of 1,670 cases at the New York Orthopedic Dispensary, and in 59 of 445 cases of Taylor, a percentage of about 13. This is above the average, and it has been given as low as 5.6 per cent. The liability to this affection often, though not always, varies as to the time and thoroughness of treatment of the original dis-

ease. Paralysis usually persists for several months or even a year. Recovery depends directly upon the disease of which it is a complication. Treatment is principally a thorough and careful attention to the spinal condition and following indications presenting themselves, together with spinal traction, massage, electricity and in a certain number of cases the application of actual cautery seems to benefit.

Operative Treatment—Laminectomy once advocated, but results were disappointing and the death rate large, so that it has been practically abandoned.

Constitutional treatment may be summed up in a few words—food, fresh air, and tonics when indicated. In the past few years change of climate has been made a feature in many localities, removal to the sea coast or to a mountainous district improving the hygiene and supporting the patient. This has proven a valuable aid in treatment.

Tuberculin—Recently tuberculin has been used extensively in the treatment of bone and joint tuberculosis. Nutt and Hastings report a large number of cases treated in this manner, and their reports are very favorable, the conclusions being as follows: The initial dose should be .0001 to .0002 mg., increasing to .001 mg., innocations being given every three or four days. When a dosage of .001 is reached the interval should be increased to five to seven days; the dose should then be gradually increased to .01 mg., when vaccinations should be given once in ten days. After an interval of rest, the same series of dosages should be repeated.

Great care should be used to avoid reactions.

Larger doses are not advisable.

Temperature should be taken q-4-h before and after innocations for forty-eight hours; a sudden rise of temperature should be followed by a decrease in dosage.

Constitutional symptoms, chilly sensations, headache, nausea, etc., within forty-eight hours after innocation should be followed by decrease in dosage.

Opsonic index is not a guide to the removal of mechanical supports.

Tuberculin is to be continued regardless of opsonic indices, being guided by constitutional signs.

Tuberculin can be given safely without ascertaining opsonic index.

Tuberculin is not a cure but a valuable aid in local and in constitutional treatment.

HOW TO SUCCEED IN THE PRACTICE OF MEDICINE.*

BY T. M. ROBERTS, M.D.,
Sweetwater, Tenn.

Mr. President and Gentlemen:

The subject I have selected to write a paper from, to read on this occasion is "How to Succeed in the Practice of Medicine." No doubt you will wonder why I select so difficult a subject to write on to bring before this body of men among whom many are eminently successful. The only apology I have to offer is that I fully realize that the business side of our lives is wonderfully neglected and that possibly I might say something that would benefit somebody.

First, I would say, join the Medical Society. In so doing you are refreshed on different subjects, you become better acquainted with your professional brethren, you understand them better, you have a nice social time with them, you keep abreast with the profession, and you are made a brighter and better man. The laity is waking up to the necessity of the doctor belonging to the medical societies and keeping posted, and marching with the procession. I do not think any doctor can afford not to belong to his County Society and the State and American Medical Association. Again, I urge you to make friends of your fellow practitioners. In your consultations, you can have a nice social time with him; you will understand him better and he you; you will have confidence in each other; and it is elevating to the profession. The young man who comes out of college, fresh, should not

be too big for the profession, neither should the old doctor have his petty jealousies of the young man. After I came out of school, with all my knowledge (?) I soon learned there were old men in the practice who had never seen inside of a college, who could easily knock me out in diagnosis and treatment. I was like the old proverbial wasp—larger when first hatched out than I have ever been since—but I soon shrunk to my normal size. I flatter myself that I have the confidence of the profession, of which I am very proud. I would rather have the confidence of the profession, with a small following of the laity, than a great following of the people without the confidence of the profession; for, with the confidence of the profession you will soon have a reasonable and lasting following of the best people. For nearly nineteen years I have practiced medicine, and not yet have I quarreled with any physician. One does not have to be brilliant, apt, or make any special effort to have friends in the profession; only be a gentleman and acquit yourself like a man among men.

Second, I would say, make friends of the people. If you have friends you must show yourself friendly. "How shall we do these things; shall we toil after every man who has money; shall we make a special effort to court the good graces of all the well and swell-dressed society ladies? No, indeed; none of these. How then? Be kind and courteous to all, but dignified and self-possessed. How can we gain and keep a practice? Be patient to wait; be industrious; do what comes to you well; make yourself of worth; make yourself in demand; do things. Keep your own secrets; don't talk too much. If you are in hard luck, don't tell it. Do not play croquet in the back yard or be in your neighbor's store playing checkers, but stay in your office where you can be found, and be ready to take care of whatever comes your way. Above all things, read your books and journals and strive to make yourself as competent to do things as any one else under similar circumstances. Again, I would emphasize, do not talk too much, for if you do, oftentimes you will

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wish you had not said it. Now, gentlemen, please don't, oh, please don't, tell people what you are giving. You cannot make doctors out of the people and you only confuse them and arouse their prejudices by their learning a few names. The people are prejudiced against some drugs and there are some you will want to give them which they may like the effects of and will want for every little ailment. They will secure them themselves and acquire a drug habit that they will never shake off. Also, the more mysterious to them, the more confidence they have in you. Do not allow them thermometers or tell them their temperature; they do not understand it and it is easy for them to become unduly alarmed. Do not be skeptical, but believe in what you do. You can make quackery out of it if you please, or be a good honest practitioner. You cannot save life to all, for man was born to die, but you do know you can do much good for suffering humanity.

You should keep up with your collections. The nearer you can keep up with your bills the better for you. It is good for you in many ways. Old accounts and large bills are hard to pay. The closer you collect the longer your friendship and patronage, and you will have the use of the money. One should have no pets; if you do, as a rule, they finally will become your enemies. You should collect all the year—from January the first till the first of the next January. There is some art in collecting. One should not haunt a man the year around for what he owes him, but keep yourself wide-awake and study his condition. There is no use to annoy a farmer about what he owes you after he has exhausted his crops until he raises something else; but be in need of what he raises when it comes in. Be pleasant with a man when you approach him about his account, and, if he is in hard luck, sympathize with him in his condition and try to leave him feeling good. Respect his feelings and never ask him for money in the presence of others, but always do it privately. We should require the money for obstetrical work when the work is done.

They have plenty of time and warning to prepare for it—it is not sudden sickness. The small farmer is more to be excused; we can do his work and wait for his crops to come in, but the factory hand who draws his money every two weeks has no excuse. He is as rich nine months beforehand as likely as he will be nine months afterwards. We should make it understood among people in general that we are worthy of our hire and want our money, and are going to have it if it can be had. In collecting bills, we should size up our man; there are \$20.00, \$10.00, \$5.00 and \$1.00 men. We may ask a man to pay us some money a month in the future. Be sure to ask him to get up a little more than you think he will. If you ask him for \$10.00, possibly he will pay \$7.50; if you ask him for \$5.00, likely he would pay you only \$2.50. They are more apt to fall short of what you ask than they are to go over it. When you start in to collect from a man and you know he can pay you, don't let him go until you get it. Be charitable and do your part of the charity, but keep after the "deadbeat" and make him pay. How shall we do it? By getting the money, or not doing the work, and by the help of our fellow practitioner. How are they to help us? By doing as we do, demanding their pay. Don't be afraid of your job; don't be afraid your neighbor will get your work. If he prefers to go, let him do it—you stay in your office and get the dollar he would have gotten had he been in his office. In requiring the dishonest man to pay, you give him a better opinion of himself, you are helped by the use of his money, and he is made a better man. You are teaching and preaching the gospel of honesty and duty.

Finally, gentlemen, we should attend strictly to our own business and let the other fellow's positively alone. We should not take the sitting-up occasion to portray to the sisters the weaknesses, the incompetence and the shortcomings of our fellow practitioners, nor should we allow them to do it. There should be no backbiting, bickering, nor grumbling, but we should strive

to keep the Golden Rule, and instead there should reign peace, good will and happiness to all.

THE CARE OF CHILDREN'S TEETH.*

BY J. L. AUSTIN, D.D.S.,
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We encounter many difficulties in the care and management of children's teeth.

The differences in the treatment of the deciduous teeth of children in comparison with the permanent teeth of the adult are due to childhood only, for the caries in children's teeth is the same as caries in the teeth of the adult, and the differences we make in operating do not lie in the tissues, but are due to childhood.

The child is a bundle of impulses, each of which is ready to break into action without notice or restraint. Much too frequently the dentist's first meeting with the child is when it has been wrought up by pain until its nerve endings are all on the alert, ready to take fright at the least suggestion of future suffering.

Children are quick to discover a failure to perform a promised service, and if the failure has resulted in pain to them, or if the relief promised does not come, then the child's first thought is that it has been deceived.

If they, by their resistance, cause the operator to inflict more pain than he would otherwise, they are not disposed to see it and usually show it without reserve or concealment.

On the other hand, a child who has been tortured by pain and finds the promised relief, will have a friendly feeling toward the one who conferred the benefit.

Children do not act from reason but from impulse, and if they are properly handled are easily controlled.

The most important question to be considered in dealing with children is how to obtain that control of child nature that will give opportunity to do for them that which is best.

Never break down the courage of a child by an operation; never give a child a nervous shock that it will recover from slowly; better delay an operation, better do almost anything than this, unless in some cases demanding the extraction of a tooth that must be performed. It is best, however, to be firm with a child when you must give pain. Tell them you are going to hurt them a little, and when the operation is over and they obtain relief, they will appreciate it and feel you are their friend. Plan your operations carefully, frequently doing almost nothing, and dismiss for a future sitting rather than lose control of the child.

In handling children the psychic influences are of importance. It is easy for some people to control children; for others it is not. If you cannot gain the confidence of a child it is sometimes best for the child to advise the parents to take them to another dentist. Children will often have more confidence in a stranger than some one whom they know well. Frequently only temporize and the child will take for granted the operation is successfully begun, not something to deceive, but to gain confidence of the child. Never allow parents to deceive a child in your office, as it is likely to result in harm, lessening the child's confidence in humanity.

While the main difficulties in the management of children's teeth are in the directions indicated above, there are matters pertaining to the progress of development of the deciduous teeth, the absorption of their roots in the process of shedding, their replacement by permanent teeth, and the development of the roots of these, that must have careful consideration at every step of the operations upon the teeth of children. Considered from this standpoint, we should regard all persons under fourteen or fifteen years of age as children; for the development of the permanent teeth, exclusive of the third molars which we need not consider, is not completed until about this time. The calcification of the deciduous teeth begins about the seventeenth week of uterine life and is completed about the third year.

We encounter some difficulty in the ab-

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sorption of the roots of the deciduous teeth preparatory to the shedding process. On the average this begins at about four years and continues until all the temporary teeth are lost, which is about the age of twelve. If we should desire to devitalize a deciduous tooth and fill the root, it would only be practical after calcification has been completed and before absorption has begun. Hence it is necessary to retain the live pulp if possible, and to be able to do this we must have control of our little patient; see it as often as we desire, and here is where our great difficulty lies. It is a prevalent idea that the deciduous teeth are of minor importance and the child is rarely brought to the dentist until difficulty is encountered. The mother is then surprised that they should give way before the permanent teeth are ready to be erupted. Here is one of the places where we need the cooperation of the physician; he is in the home and has the confidence of the family in regard to the welfare of the child, and it is here he should impress upon them the duty of taking good care of the little fellow's teeth, and advise that a dentist should keep close watch upon their condition.

Unless the deciduous teeth are retained until their time to drop out and give way to the permanent teeth, we will always, or nearly so, have deformity. If they are allowed to be retained too long we will have the permanent teeth coming out of line, making a bad articulation and an ugly mouth.

A large per cent of people have irregularities of the teeth to a noticeable degree, and in almost all of these cases a lack of attention to the deciduous teeth is the cause. Hence instead of depending on regulating these conditions after the children are fourteen, sixteen or more, try to prevent this before it is necessary, for this is a day of preventive dentistry as well as medicine.

In the treatment of caries in deciduous teeth we confront many difficulties simply because we are dealing with a child many times instead of filling. We may be able to cut away the approximating surfaces pre-

senting decay in the anterior teeth by means of separating saws, strips, disks, etc.; cutting more to the lingual, so as to disfigure as little as possible, and these places should always be well polished, in the posterior teeth we should place temporary fillings of amalgam, guttapercha or some of the cements, unless the strain on the child will be too great. In that case we may treat with silver nitrate, taking a crystal of it and placing it on a slab, crushing it and dissolve in a little water, making as nearly as possible a saturated solution. Slip the rubber dam over the tooth, holding it with the fingers; now carry this solution to the cavity on a toothpick, sharpened to suit the case. If possible place cavity in sunlight or reflect the rays by means of a mirror, or by using a bright light. The object of this is to fill the part of softened tooth structure with the insoluble silver salt that has been precipitated by the light. This will turn the surface black, but if kept well cleaned will prevent decay.

The silver nitrate is not indicated where the pulp of the tooth is nearly exposed by decay. If the child presents itself with the pulp exposed and the absorption of roots has not begun, devitalize and fill the roots; but if absorption has begun, there is only one thing to do, extract the tooth, notwithstanding the injury that may result, as it is the lesser of the two evils.

It should be remembered always that success in the treatment of children's teeth depends on the same care as the treatment of the teeth of the adult. The fact that the temporary teeth are to serve only for a short time is counterbalanced by the fact that the tendency to caries is much greater than in the permanent teeth. Hence careful attention should be given to every detail of the operations upon them.

The childhood period of the permanent teeth comprises the time from their first appearance through the gums until the growth of their roots has been completed, exclusive of the third molars. This includes the time from about the sixth to the fifteenth year. During all this time the permanent teeth must be treated differently

from temporary teeth, not as we might treat the teeth of an adult under certain conditions brought about by causes that may be presented.

The roots of the permanent teeth are not completed until some time after they have taken their places in the arch. During this time of growth they are liable to rapidly progressive caries. The pulp is much larger and is especially liable to become exposed by caries or in the preparation of cavities. In case of exposure we are debarred from removing the pulp and making root fillings up to the time of their completion of the growth of the roots and the narrowing of their apical foramina to very small openings. We are often presented with conditions in which an exposure of the pulp by caries means the loss of the tooth; no matter how important.

The first permanent molars are probably the most important teeth in the arch, coming through at about six to six and one-half years of age, and just previous to the beginning of the shedding of the temporary teeth. These four molars take their place and act as props to hold the mouth in its proper position while the temporary teeth are dropping away and allowing the other permanent teeth to take their places. If one of these molars is lost at this time, it always changes the facial expression and prevents proper articulation. These are the most susceptible teeth to caries, often being decayed at eight years of age.

After the first molars come the central incisors, lateral incisors, first bicuspid, second bicuspid and lastly the cuspids, which serve as keys to the arch and should seldom, if ever, be taken out when they are out of line. The tooth posterior, or even the second one, should be removed if absolutely necessary to remove one. Avoid this when possible by means of regulating. This is a very important part of dentistry and is very much neglected by a great many dentists.

The time to regulate teeth is during the childhood period or at least before the patient is matured.

We are in great need of dental dispensaries for the poor, where they could receive the necessary treatment; also we should have a law requiring children to have a dentist's certificate showing their mouths are in hygienic condition, before entering the public school, as the most common course for all infection to enter the system is through the mouth, especially where the teeth are decayed and where there is probably one or more alveolar abscesses, discharging pus, which is immediately taken into the stomach.

Many children stand at the foot of their classes as a result of neglected mouths.

Bad teeth cause bolting of the food, with ingestion of many pathogenic bacteria, thereby causing indigestion and intestinal toxæmia resulting in faulty metabolism and imperfect development of the child.

THE DIAGNOSIS OF TUMORS OF BONES.*

BY R. J. M'FALL,
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The clinical history of a patient with a tumor of one of the bones of the extremities is usually as follows: (a) For the first time, he may present himself on account of a fracture, subsequent to a slight trauma; (b) before a palpable enlargement appears, he may complain of tenderness and pain over the affected bone for months or even years; or, lastly (c), a patient presents himself for examination who has a distinct tumor.

In arriving at a diagnosis one should be very careful in considering the enlargement felt. In reality it may be due to some inflammatory process, or, in fact, it may be a true neoplasm, and if the former can be excluded, then the question naturally arises, is the tumor benign or malignant? If the patient is examined for the first time on account of an apparently spontaneous fracture, the various forms of pathologic frac-

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ture enumerated below will have to be excluded one by one, viz.:

I. Fractures associated with local lesions of bone:

A. Tumors.

1. Primary and metastatic sarcoma.
2. Metastatic carcinoma.
3. Metastatic thyroid tumor.
4. Encondroma and benign bone cysts.
5. Echinococcus cysts.

B. Inflammatory processes.

1. Infectious osteomyelitis (pyogenic).
2. Tuberculosis of bone.
3. Syphilis.
4. Aneurysms.

II. Fractures associated with general diseases.

A. Neuropathies.

1. Tabes dorsalis.
2. Syringomyelia.
3. Mental diseases.

B. Senile changes.

C. Exhausting chronic diseases.

D. Atrophy due to non-use.

E. Scurvy.

F. Rickets and osteomalacia.

III. Idiopathic friability of bone osteoporosis (*frigilitas ossium*).

In many cases it is important to note, more especially, those of primary sarcoma, tabes, syringomyelia, etc., that the fracture may be the first symptom. Generally speaking, it is well to remember that a fracture occurring with a minimum amount of force should be investigated as to the possibility of its being of a pathologic variety. Union may rarely occur in the ordinary manner after these fractures. If the spontaneous fracture be due to the rarefaction of the osseous tissue, as the result of a neoplasm, there will be the previous history and the local findings to be enumerated below, as more or less characteristic of the different forms of bone neoplasms.

It is impossible to arrive at a diagnosis

of a bone neoplasm without referring briefly to chief varieties and then differentiate them from other conditions.

There is a class, although, histologically resembling sarcomata, which clinically belong to neither group, called *peritheliomata*. They show no tendency to metastasis, but are apt to recur after operation.

Benign Tumors—True or simple bone cysts.

Thus a patient may present himself for the first time with a spontaneous fracture due to this class of tumors. Of course this could be the case with all bone tumors. If such be not the case, there is a history of pain over the epiphiseal end of one of the long pipe bones (tibia, humerus, femur). Possibly this pain has continued for months or even years, and oftentimes is followed by gradual enlargement of the bone. Seldom will you find this bulging uniformly firm. Many soft places, compressible, may be revealed by palpation. It is claimed by Carl Beck that an X-ray will show a characteristic light area, surrounded by the clear, narrow shadow of the expanded cortex.

Others, Koch and Helbing, do not place much reliance upon the skiagraph in making a diagnosis. The chief conditions from which it must be differentiated are a chronic bone abscess resulting from a former osteomyelitis, syphilis, tuberculosis and osteosarcoma. In the last named (a) the growth is also very slow and gradual; (b) the surface is uniformly hard and does not show softer areas as in simple bone cyst.

An osteosarcoma is solid throughout, while a cyst is filled with a thin yellowish serous fluid. In not a few cases an incision only will clear up the diagnosis.

Chronic abscesses due to a protracted osteomyelitis are usually situated in the upper end of the tibia. They pursue a very slow course. The pain occurring very often periodically, especially after exertion. There may be a rise of temperature in the evening.

Tuberculosis rarely causes expansion of the long pipe bones, but there will be abscess formation and sinuses at a very early date.

Deep-seated bone pain may take its origin from central syphilitic gummata. They cause no enlargement of bone, give a negative X-ray picture, and rapidly improve under anti-syphilitic treatment.

I believe up to the present time only about twenty-five cases of bone cysts have been seen or reported.

Osteomata and Exostoses—These terms are often used synonymously to represent the tumor projecting from a bone.

Exostoses are congenital multiple tumors becoming ossified about puberty, at which time they are likely to cause symptoms. They are situated most frequently near the epiphysis. They are found where the long bones grow most rapidly, viz.: the lower end of the femur and the upper ends of the tibia and humerus. They are very slow in their growth and produce no pain or tenderness. It will be noticed in some individuals that they are multiple in form, *i. e.*, occurring at every epiphysis.

After trauma, exostoses may develop slowly, or in some cases very rapidly. In those of rapid nature it will be very difficult to differentiate them from an ossifying periosteal sarcoma; oftentimes only through X-ray findings and an exploratory incision.

In a periosteal sarcoma, subsequently becoming an osteosarcoma, the bone shadow is seen arranged in spicule like rays, perpendicularly to the shaft of the bone, while in exostoses or osteomata the normal architecture of the bone is shown, *i. e.*, cortex and medulla.

It will be observed that the growth of a periosteal osteosarcoma is steady and progressive, while that of an exostosis following trauma ceases in its growth after a time.

The exostoses occurring in arthritis deformans, tabetic and syringomyelic joints are readily diagnosed by the symptoms of the accompanying conditions.

Enchondromata—These have the consistency of cartilage, and occur as nodular elastic tumors. Occasionally from a myxomatous degeneration they are soft. They may occur as pure chondromata, or as mixed

tumors, *e. g.*, myxochondrosarcomata or osteochondrosarcomata.

Most frequently pure enchondromata occur in the scapula, pelvis, long and short pipe bones of the extremities, and the phalanges of toes and fingers. Perhaps in the two latter situations they occur more frequently than in any other portion of the body.

When occurring in the meta-carpal bones they cause a gradual expansion of the bone, like a spina ventosa, and are as central tumors.

On the fingers and toes enchondromata pursue a very benign course, and are as multiple tumors, but in other bones they may grow to an enormous size. Enchondromata should be easy of diagnosis on account of their slow growth, consistency, location as single or multiple tumors at the epiphysis. The X-ray shows a light shadow and there is absence of tenderness and pain.

Sarcoma of Bone—This is the most frequent of all bone tumors. As secondary growths they are a frequent result of a metastasis of a primary sarcoma of the breast, *testis et cetera*. They differ from the secondary carcinoma of bone in the clinical fact that the primary growths in the latter case are often insignificant when bone metastases occur, while in sarcoma the metastasis appears at an earlier period, and the diagnosis of the primary growth has usually been made.

Not infrequently, on account of a fracture, a case of malignant neoplasm may first present itself, occurring after slight violence or a spontaneous fracture. Other cases may present themselves with the history of a tumor of some internal organ having been operated upon some two years previously and having developed subsequently a pain over the hip, limping and a shortening of the lower limb. An X-ray in such cases shows a clear space opposite the head of the femur, due to bone absorption by the metastatic growth. Perhaps the only difference in the diagnosis of primary and secondary sarcoma is the absence of a primary seat in the former and the fact that the latter grows more rapidly, and has less

tendency to ossification. In the diagnosis of the primary forms an effort should be made to distinguish the variety, as from a clinical point of view they differ very greatly in their malignancy. There are, generally speaking, two forms, viz.: periosteal and myelogenous. Both predilect as seats the epiphyseal end of the long pipe bones.

The percentage is as follows:

Upper end of tibia.....	35 per cent
Lower end of femur.....	18 per cent
Upper end of humerus.....	13 per cent
Ulna and radius.....	4 per cent

The periosteal sarcoma are usually of the small round spindle-celled type. They give rise to enormous tumors, which may undergo ossification, due to lime salts deposited therein.

The giant-celled variety of periosteum is quite rare.

Myelogenous sarcoma may be of the giant, spindle or round-celled type. These tumors cause the medulla to expand quite rapidly, but at the same time new bone is formed from the overlying periosteum.

This form is often associated as an osteochondrosarcoma or as a myxochondrosarcoma. Generally speaking the softer a bone sarcoma the more malignant and the more rapid the growth.

The following data will serve a good purpose in making up a diagnosis in bone sarcoma:

1. They occur in the most rapidly growing bones (humerus, femur and tibia) of young adults, and at the epiphyseal ends of these bones. Perhaps not over 5 per cent occur later than the fortieth year of age.

2. Unless ossification has occurred, a palpable enlargement appears rather early.

3. In the medullary variety, the patient complains for some time of pain, over the end of one of the above mentioned long bones. Subsequently a swelling appears at the seat of pain, and owing to the amount of osseous tissue will depend the consistency.

4. A trauma occurring in a young adult, followed by pain and tenderness, which does not subside in some four weeks, should

lead to the suspicion of the development of a sarcoma.

5. An effusion in the adjacent joint, and a rise of temperature, are not uncommon in the periosteal form.

6. A sarcomatous growth of bone varies greatly. For instance, in the osteosarcoma and the giant-celled it is very slow, while in the other varieties it is the most rapidly progressive of all bone neoplasms.

7. The X-ray is useful in distinguishing these bone tumors from trophic changes and inflammatory processes. The cellular types, like the periosteal and the small rounded myelogenous sarcomata, generally show a faint shadow or translucency wherever the bone has been involved. The myelogenous and the ossifying periosteal sarcoma give the most typical. Fine spicules of bone are seen radiating from the bone in periosteal osteosarcoma. In the central or myelogenous osteosarcomata, the X-ray shows a deep shadow with irregular margins throughout, this differing from the soft myelogenous, which only shows a faint shadow.

8. A most valuable sign in both benign (osseous cysts) and malignant types of bone tumors is spontaneous fracture. Indeed, it may be the first symptom for which the physician is sought.

9. In an osteosarcoma with large vascular spaces the pulsation may be so great as to stimulate an aneurysm. In the differential diagnosis of an osteosarcoma we must not lose suspicion of tuberculosis of bone, chronic abscess, subsequent to an acute osteomyelitis, osseous cysts, either simple or benign, myelomata, peri and endotheliomata, and secondary carcinomata.

The chief differential points of the first three were enumerated under bone cysts. Of other malignant neoplasms, they can only be differentiated by the age of the patient and the history of the case.

Carcinomas of bone are always secondary to a primary growth in the breast, prostate or thyroid, and occur late in life.

Endo- and peritheliomata do not differ clinically from other forms of sarcomata except they usually occur after forty.

Clinically myomata cannot be differentiated from sarcoma.

Finally, carcinomata of bone occurs most frequently in the femur, the primary tumor being overlooked until spontaneous fracture.

Myomata are composed of tissue resembling the marrow of young bones. This tumor arises in the medulla of the bone and on section looks like freshly cut liver. It is oftenest found in the tibia, while rarely it may be found in the lower end of the radius and ulna, upper end of the fibula and humerus, and the lower end of the femur.

The patients are young adults.

They behave much like giant-celled sarcoma from the fact of slow development.

Some twenty-five cases of endo- and peritheliomata have been reported which, clinically speaking, are not to be differentiated from osteosarcomata, except by the fact that 73 per cent have occurred after the age of forty, while sarcomata is very rare at that period of life.

THE DIAGNOSIS OF DUODENAL ULCER.

BY J. F. GALLAGHER, M.D.,
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The diagnosis of disease is perhaps the most alluring thing in the whole realm of medicine and surgery, as it is often the most difficult. In the earliest days this was largely an art acquired by long experience aided by tradition and lack of initiative in scientific endeavor to ascertain the truth. But with the advent of post-mortem work and instruments of precision, the art has been commendably tempered by science so that in present-day work they go indissolubly hand in hand. The millenium has not arrived, however, and our conclusions even yet are based very largely on a series of probabilities.

It is not necessary to be in medicine very long before we are confronted by the very necessary and perhaps difficult task of unlearning many things which we have learned unconditionally to be true. The post-

mortem room has done, and is still doing, much to show how fallacious our conclusions often are. And, it would seem, this agency has forced us to correct our ideas of duodenal ulcer.

A great deal that is known of this pathological entity has been obtained by thorough post-mortems, together with subsequent study of the history, and quite as much has been obtained by a study of this condition by exploratory coeliotomy.

Within recent years the great impetus which has been given to the consideration of this disease is largely due to the Mayo brothers, Moynihan and Mayo Robson. Others have contributed valuably, but everywhere in the somewhat abundant literature on the subject their names are freely used as authority; due, no doubt, to their great number of cases. The medical side has by no means been neglected, for we find such men as Ewald, Einhorn, Christopher, Graham and others contributing valuable monographs. In the beginning these cases are totally medical (excluding, of course, those cases which first make their presence known by some complication as perforation, hemorrhage, etc.). So this condition is of equal interest to both surgeon and internist. Indeed, it is the latter who in all probability sees the patient first and upon whom the responsibility rests of recognizing the condition before some of the many and serious complications arise which will greatly jeopardize the life of the patient.

In 1871 Mr. Travers discovered a duodenal ulcer post-mortem and published his findings—the first in medical literature. Seventy years elapsed before Bucquay made the first symptomatic diagnosis confirmed by necropsy, and in 1893 Codivilla performed the first operation for chronic, non-perforated ulcer of the duodenum—over three-quarters of a century after it had been proved a distinct pathological entity. In recent years many, notably the Mayos and Moynihan, have forcibly brought this condition before us with irrefutable statistics showing the comparatively wide prevalence; not that it is a new disease but that its existence has been overlooked or erro-

neously diagnosed as "dyspepsia," "chronic indigestion," or in other equally meaningless terms.

Moynihan is most enthusiastic over the ease with which ulcer of the duodenum may be diagnosed, laying great stress on one symptom and declaring it to be almost pathognomonic. On the other hand, Murphy (1) states that the symptoms are inconstant and uncertain, quoting Perry and Shaw to the effect that in 60 per cent of their cases the first symptom of moment was what is commonly classed as a complication, viz.: hemorrhage or perforation. Ewald (2) holds that the differential diagnosis of duodenal ulcer from gall-gladder, pancreatic, stomach and appendiceal disease to be at times extremely difficult. However, if the symptoms which I am about to relate are true, and they are testified to by men of unquestioned ability, then I am quite sure most of us may correctly diagnose this condition, at least in a typical case, if we keep in mind not only its possible presence but its comparative frequency, it being much more frequent than gastric ulcer (12:1 to 3:1). Indeed, as Cheney (3) says, it is "always to be reckoned with in the diagnosis of disease of the upper abdomen."

The clinical history far outweighs any other method or methods yet adopted to arrive at a correct conclusion in this condition. Physical examination is often entirely negative and other methods, as gastric analysis and examination of the feces are but finishing touches, as it were, to perfect the completed picture, their absence by no means detracting from the general notion.

Men are more frequently attacked than women—just the reverse to what we find in gastric ulcer. Murphy (1) says it occurs in the proportion of 3 duodenal to 1 gastric, whereas Codman (4) places it at 2 to 1. Nor does it seem that any age is exempt, cases having been found in the child a few days after birth, betokening, possibly, its origin in utero, as well as its existing in advanced old age. Usually, though, the patient comes between the ages of twenty-five and forty-five.

Our patient may present himself with all the appearances of perfect health; in fact, may be above his normal weight, due to a good appetite and his frequent taking of food to relieve his symptoms. On the other hand, by the so-called process of "correcting his diet," he may have eliminated almost every nourishing article from his meals, and this, together with the possible long continued hemorrhages, or gastric stasis, or both, may bring him to us a starved and exsanguinated wreck.

A striking thing to be noted in eliciting the history is the chronicity, the period varying from "one to twenty years, often running thirty or forty-five" (5). During this time there are remissions with comparative comfort, possibly complete relief, but the symptoms return to last a week or a month when they again ameliorate or disappear only to return again.

The time elapsing between the attacks as well as their duration and intensity is very variable. In the beginning the attacks may be presumed to be simple attacks of "indigestion," which may be relieved by correcting the diet or the taking of some simple remedy, *e. g.*, cooking soda. The attack may last for a week or a month, to be followed by quite a period of relief, but the severity increases and the interval of comfort shortens as the disease progresses.

The pain of duodenal ulcer is said to be characteristic, indeed, Moynihan claims it is pathognomonic. It is of a dull, boring, aching type, often severe but not unbearable or intermittent, as is often that of biliary colic. It comes on from two to five hours after eating and is relieved by taking substances into the stomach. The fact that the pain comes on when the patient begins to feel hungry suggested the name "hunger pain" given it by Moynihan. It often occurs at night and some patients go to bed with a cracker or other light article of diet close at hand to be eaten when the pain appears. It is located in the epigastrium near the ensiform cartilage and may radiate to the back to either side of the vertebral column. The length of time which the taking of food lends freedom from pain, other

things being equal, may be taken as an approximate index of the distance the ulcer is from the pyloric ring (the longer the relief the further removed), remembering, of course, that practically all duodenal ulcers (exclusive of those due to burns) are located above the entrance of the bile and pancreatic ducts.

A study of the cause of pain in duodenal ulcer is interesting, and while ascribed to both pyloric spasm and the irritation of the hydrochloric acid on the ulcerated area, Pilcher's (6) experiments seem to show conclusively that the action of the acid gastric juice is entirely responsible.

Belching of gas may be present, but it is not constant, and is of doubtful value in diagnosis. Eructations of sour, acid food is often present. It is the familiar "heartburn," or, more technically, pyrosis. Vomiting is not an ordinary symptom of uncomplicated duodenal ulcer, but when it occurs or is induced it often gives marked relief from pain for the time present.

Examination of the stomach contents usually show hyperacidity, especially in young subjects and before complications as gastric stasis, manifest themselves. Graham and Guthrie (7), in a paper on the "Value of the Test Meal in Gastric Diagnosis," report 250 cases examined in which ulcer either of the gastric or duodenal type were demonstrated. Of these, 125, or 50 per cent, showed free hydrochloric acid to be normal, below normal or totally absent. As a surgical indication, the presence of decided food remnants in the test breakfast is of more significance. The presence of blood, either apparent or occult, is of great value, though we should be aware of the fact that in the more delicate tests the small quantity that may be occasioned by the passage of the stomach tube may be sufficient to give a positive reaction. Blood in the stomach contents is more often present in gastric than duodenal ulcer.

The passage of tarry stools or the detection therein of occult blood after the institution of a meat free diet is of more importance, relatively, than the detection in

the stomach contents, being more frequently found in duodenal than gastric ulcer. In this case also sources of error are abundant in that the blood may come from other parts of the alimentary tract.

In 1909, Dr. Max Einhorn described a string test for duodenal ulcer. This is commonly called the "Einhorn duodenal bucket" from the fact that a small bucket or weight is attached to the end of the string that it may find its way into the duodenum. It is left in over night to be withdrawn in the morning when the string is searched and examined chemically for blood. The unreliability of such a test is self-evident. Among the errors to be met with may be mentioned: (1) That the bucket may not enter the duodenum at all, and (2) if it does, it is possible that the string may not come in contact with the ulcer.

Opinion is divided as to the value of physical signs. Moynihan (8) declares them to be of no value, or, at least, unnecessary. It is doubtful if there are signs that are at all definite or constant. Rankin (9) believes tenderness in the epigastrium to the right of the median line just under the ribs to be of value, and without rigidity of the right rectus on deep palpation the diagnosis is doubtful. Gunzburg (10) relies on physical signs and presents a new one—that of the presence of a tympanitic zone in the region corresponding to the quadrate lobe of the liver. This strikes me to be rather fanciful. To elicit it at least requires diagnostic acumen of which the average man is not capable.

Of the complications, such as hemorrhage, perforation, etc., and the differential diagnosis, I shall not speak. To consider the latter would be but a tiresome repetition of symptoms, many of which may be found in several pathological conditions of the upper abdomen. My idea in presenting this paper is to call attention to the fact that there is such a thing as duodenal ulcer, that it is comparatively frequent, that it has a definite symptomatology in most uncomplicated cases, and that, indeed, it must be

reckoned with in the diagnosis of abdominal conditions, especially of the upper zone.

1. Kelly-Noble. Gyn. & Abd. Surg.
2. Berliner Klinische Wochenschrift, 1910, No. 5.
3. Am. Jour. Med. Sciences. Vol. 141, p. 328.
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PELLAGRA.*

BY DR. P. H. ACUFF, WASHBURN, TENN.

1. Synonyms:

Pellarella, Alpine scurvy, Austrian leprosy, Austrian rose, disease of landes, dermatogragra.

2. Definition:

Pellagra is an intoxication disease occurring in epidemics, and characterized by slow evolution and a complexity of nervous, gastric and cutaneous symptoms.

3. History:

The history of pellagra is comparatively recent. It has been known in Spain since 1735, and was first described by G. Casal, of Ovido, in 1762 under the name of *Mal-de-rosa* from its characteristic erythema.

It probably appeared in Italy about 1750, but it remained for Frapolli, of Milan, in 1771, to describe it under the name of pellagra, which analytically, is the Italian *pelle*, for skin, and *agra*, for rough. About 1810 Marzari first called attention to the relation between spoiled maize and pellagra, and in 1874 Balardini first suggested the theory that the disease was probably due to a maize which had undergone a change by reason of fungus growths on the grain.

This change, produced by the parasite, was greenish in color, and hence we have Balardini's "Verdet theory" which has been developed, and most ably defended, by Lombroso.

4. Geographical distribution:

Present statistics show that pellagra is most prevalent in Northern and Central

Italy and Roumania. It has been seen in France, but is rapidly disappearing since other cereals are replacing maize as a food.

It is more or less prevalent in Spain, upper Egypt, Asia Minor, Austria, Servia, Bulgaria, India, Africa, Mexico, South America and more recently in southern United States. It seems to follow the introduction of maize into these countries, but the pellagra zone, claimed to be 46° N. 11° W. and 26° longitude of Paris, is quite small as compared to the area over which maize is cultivated and used largely as the food of the poorer classes.

5. Etiology:

Predisposing causes:

Sex seems to exert little influence, the preference probably going to the males.

Age. The disease is usually seen in middle life, from 20 to 50 years, and is rarely, if ever, seen in infants.

Occupation. The consensus of opinion is that the disease is almost confined to field laborers and those who are directly concerned in the manufacture of whiskey, beer, cotton seed oil, etc.

Race is of comparatively little importance; however, the Jews are quite exceptional, probably because they rarely engage in agriculture.

Season and climate. The disease first shows itself in the spring months, February, March and April, ameliorating during the summer and remitting in winter only to recur in the following spring.

Previous sickness seems to play no active part in causing the disease.

Alcoholism is questionable, as many observers contend that the infection arises from the use of alcohol, distilled from spoiled maize.

Heredity plays no part, with the possible exception of an inherited tendency.

Contagion. The disease is not contagious by contact, but may be taken by eating same food and living under similar hygiene.

Exciting causes. Perhaps the most universally accepted cause to-day is that the disease is due to an intoxication from the use of Indian corn or maize which has undergone certain changes, under the in-

*Read before the Grainger County Medical Society, August 2, 1911.

fluence of unidentified parasitic growths (or fungi) with the production of toxic substances of a chemical nature. The morbid action of maize is variously attributed to:

1. Deficiency in its nutritive principles.
2. Specific toxic substances contained in the grain.
3. Poisons elaborated after its ingestion.
4. Toxic substances elaborated during decomposition of the grain.
5. Fungi or bacteria found on the maize.

Recalling the composition of maize, we know that it ranks high in nutritive value, and persons have lived solely upon it for months without any signs of inanition whatever, and as to a normally contained specific toxin in maize, we must stipulate some theory for the fact that millions live upon it with impunity before accepting this statement as conclusive.

Regarding the elaboration of poisons during the decomposition in the alimentary tract, Lombroso believes that the poison is due to the absorption of certain toxic agents produced by the saphrophytic action upon the ingested grain. Since he has obtained from the watery extract of fermented maize a narcotic principle resembling "Conin" and also "pellagrazein" an alkaloid resembling strychnine, we may assume that these agents may cause pellagra in the same way as sphacelinic acid and cornutin are believed to give rise to ergotism.

The investigations are drifting to the conclusion that while maize may not be the primary causation of the disease, that it is certainly a very fertile culture media for the organism which may cause it. Therefore, its use as a food in the treatment of pellagra should be interdicted.

Different investigations have extracted innumerable substances and bacteria from damaged maize, but their results have been mutually contradictory and the fungus incriminated by the majority of authors as a cause of pellagra is, strange to say, the *Penicillium Crustaceum* or the common blue mold, which is found on practically all heterogenous media.

In reviewing the fungus theory of pel-

lagra it is interesting to note that of all diseases known to be caused by fungi, such as thrush, ring-worm, pinta, tinea imbricata, actinomycosis, pneumonicosis, etc., not one in any way resemble pellagra. So, for our present knowledge, it is sufficient to say that perhaps the best explanation for a majority of the symptoms associated with this disease is the toxemia of both the cerebro-spinal and sympathetic nervous system, as a result of absorption of toxins from the gastro-intestinal tract.

More recently, however, another very plausible theory for the causation of pellagra has arisen in the semi-drying oils.

We know that cotton seed oil in the South constitutes a great per cent of our food, while a similar product—oil of sesame—occupies the allied position in the East. These adulterated semi-drying edible oils, which are used for adulterating olive oil, lard, etc., are stored up in the human body in quantities which cannot normally be disposed of, in which case they are deposited as fat, foreign to the human organism and in their final disposition by oxidation there is developed a series of end products that act in a deleterious manner upon all the cells and intercellular tissues of the body.

Chief of these semi-drying oils are oil of maize, sesame and cotton seed. In addition to the normal glycerides of the fatty acids found in the human body, this group of oils contain a glyceride of linolic acid. This glyceride (Linolin) is the constituent of the group which places them in the semi-drying class, which is brought about by the facility with which it oxidizes.

When linolin is oxidized, linolic acid is formed. This readily combines with the alkalies of the body, forming salts which undergo oxidation and ultimately form a series of aldehyds and volatile acids. Aldehyde is rapidly converted into acetic acid upon exposure to the air. It possesses marked anti-putrescent properties, also appears to paralyze the vagus, though its cardiac action is feeble. Locally it is very irritating. The periodicity of the erythemia is explained by the fact that the aldehyds and volatile acids show a selective affinity for

regions where fat is thinly deposited and the blood supply rich and active, *i. e.*, skin or thorax, hands and feet, also in mucous membranes, *i. e.*, mouth, and gastro-intestinal tract. The sun's rays facilitate the oxidation of this linolin in the fatty tissues, and when the fat is all oxidized the erythema disappears until this layer of fat is redeposited, which on the hands or feet requires four or five months.

PATHOLOGY.

In any disease characterized by such a variety of symptoms and such a great chronicity, with the frequent presence of intercurrent affections and senile evolutionary changes, we could hardly expect a definite, single, morbid condition.

By noticing the structures separately perhaps we can better systematize the pathological changes.

Visceral Organs as the heart, lungs, liver, kidney, spleen, intestines and other organs and structures innervated by the vagus, sooner or later in the disease, undergo atrophy and fatty degeneration. Wasting of adipose and muscular tissue, also brittleness of bones, are seen in advanced cases.

The heart, liver and spleen, as well as the ganglionic cells, are the seat of an abnormal pigmentation somewhat similar to a senile change.

Intestines.—Atrophy of the tunica media or muscular layer, with occasional hyperemia and ulceration in the lower part of the tract are frequently seen. Owing to the elimination of toxic products by both skin and mucous membrane, we have both an exanthem or erythema on skin and an exanthem or stomatitis and intestinal hyperemia, although we must not ignore the tropho-neurotic influence upon these symptoms.

Skin.—Here we see congestion, decided thickening, and pigmentation followed by more or less extensive atrophy of the layers of the skin, with disquamation of epidermal layers and sclerosis.

The erythema is dark red with some edema, patches soon becoming dark brown with thickening and loss of sensation. Epider-

mis then desquamates, leaving a red and some times fissured surface, vesicles and bullae may appear and the skin not infrequently resembles weeping eczema.

Brain.—Here we find thickening, turbidity and often adhesions of the meninges, atrophy and induration of the cerebral substance, increase of the sub-arachnoid fluid, profound alteration in the cerebral cells, with an increase of neuroglia. The cell alterations in acute cases are those found in other acute forms of psychosis.

Medulla and Cord.—Lesions in the bundles here are the same as found in progressive paralysis and tabes dorsalis. Degenerations of the posterior roots and columns are sometimes seen with practically the same anatomopathological alterations as in progressive paralysis and tabes; blood; red corpuscles are almost invariably reduced, haemoglobin and color index frequently low. Leukocytes usually normal, but may be increased.

SYMPTOMS.

Premonitory—vague bodily weakness in spring, headache, vertigo, insomnia, cramp, pain in spine and joints, dyspepsia and depression of spirits.

We classify the symptoms under three general groups as relating to

1. Alimentary canal—digestive disturbances.
2. Skin—cutaneous disturbances.
3. Central Nervous System—nervous disturbances.

EARLY SYMPTOMS OF FIRST STATE.

Sensation of heat in mouth and stomach anorvexia, coated tongue, ptyalism, highly congested mucous membrane of gums and lips, with possibly vesiculation and ulceration, flatulency, epigastric pain, vomiting, especially in alcoholics, diarrhoea alternating with constipation, muscular weakness, especially in lower extremities. Temperature usually normal. Pulse may be slightly accelerated at times. Occipital headache, spinal neuralgias with cramp-like pains running to lower extremities. Knee jerk exaggerated. Mild mental weakness with increasing depression, serious and senile ex-

pressions. Ocular phenomena or inequality of pupils, dilatation, diplopia and amblyopia, cataracts are occasionally seen. Erythema begins to appear.

SYMPTOMS OF SECOND STAGE.

Symptoms of first stage are intensified. The characteristic erythema now becomes more prominent. It is symmetrical in form and attacks usually the exposed surface, selecting at first especially the extensor surfaces, backs of hands, forearms, face, back of neck, upper chest and dorsal surface of the feet. Later the flexor surfaces become involved, but the plantar and palmar surfaces always escape. The skin at first becomes red, with a sensation of burning and itching and slight puffiness—very similar to sunburn. This red color disappears temporarily on pressure, and after some days bullae may appear and fuse into large plaques, filled with serum or even sero-purulent or sanguinolent fluid. The edema may then disappear, the epidermis dries and falls off in small grayish scales, or instead the initial redness may become darker in color, dry and scale without bullous formation.

After the first attack the skin remains pigmented, and during subsequent attacks gradually undergoes chronic thickening with pigmentation of a dirty yellow, yellowish green, or bronzed color, loss of its elasticity, articular folds grow deeper, painful fissures or deep crusts and small ecchymotic spots may occur. The skin now appears indurated, thickened, hard and rough.

Pellagra Sine Nellagra or *Pellagra* without the erythema, is sometimes referred to, but usually the absence is only temporary and can be looked for later. The stomatitis is increased as is shown by the "bald tongue," which is smooth and denuded of epithelium. The diarrhoea grows worse, more persistent and is sanguinolent or serous in character, nervous phenomena are greatly exaggerated in this stage, and cerebro-spinal disturbances are frequent, the vertigo, headache, insomnia and neuralgia are increased, physical manifestations of melancholia, mild feebleness, slow cerebration and inactivity may develop into melan-

cholia with anxiety, delusions of persecution, perverted ideas of religion, refusal of food, suicidal and homicidal tendencies, circular insanity, dementia or paranoia, muscular feebleness or partial paralysis may occur when the gait is paralytic or spastic—paralytic localized paresthesias may occur due to vaso-motor and trophic disturbances.

SYMPTOMS OF THIRD STAGE.

This is really the terminal stage and is characterized by the cachexia, which now stands boldly in the foreground, with dementia, paralysis and other cerebro-spinal phenomena.

There is an increasing marasmus with marked anemia, atrophy of the subcutaneous fat and musculature and a lack of resistance to other intercurrent diseases. We may now see paralysis of the sphincters with incontinence of urine and the passage of painless, serous stools. Death follows from edema and effusions of the heart, acute tuberculosis of the lungs or septicemia.

DURATION AND PROGNOSIS.

The duration is somewhat indefinite and may continue from one to twenty years, according to the individual and the severity of the attack.

The prognosis is serious, although recovery is the rule in the first stage under proper treatment. In the second stage it is more difficult and the mind may remain permanently injured and enfeebled. While in the third stage death is the inevitable consequence.

TREATMENT.

This we consider under prophylactic hygienic and medicinal.

Prophylaxis.—Interdict the use of spoiled maize by replacing it with some other cereal, interdict the use of any product made from or connected with spoiled maize. Avoid the use of cottolene or any food prepared by use of cotton seed oil.

Dietetic and Medicinal.—In our effort to secure remedies which will arrest the progress of this disease we are again somewhat handicapped and all of our remedies are

more or less unsatisfactory. As to diet, we advise the free use of good and easily assimilable food, fresh sour milk, eggs, grape nuts, force, etc.

Among the drugs in vogue perhaps arsenic, quinine, strychnine and irons; urotropin deserves most consideration. For the special symptoms, such as diarrhoea, opium and bismuth may be used. For insomnia, some simple hypnotic as veronal or chloral. For erythema, some antiseptic ointment as zinc oxide or boric acid, or a moist dressing of tr. iodine, or a 1 per cent aqueous solution of picric acid is valuable in most cases.

Some of the newer compounds of arsenic are very much lauded, as atoxyl and soamin, which are both trade names for different forms of sodium arsanillate, and contain about 26 and 22 per cent respectively of arsenic.

Sodium arsanillate is prepared by condensing aniline and arsenic acid, eliminating water and isolating the arsanilic acids. The sodium salts being prepared by the usual method of forming any salt. Arsenic in this form is liberated very slowly in the system and thus gives a continuous therapeutic effect without the irritation of a sudden liberation of a full medicinal dose. The dose of these preparations or of sodium arsanillate is 1-3—3 grs. hypodermatically every other day, gradually increasing to 10 grs., and maintain this dosage till 100 grs. has been given. This preparation should not be given by the mouth, as it is decom-

posed by the acid of the stomach and toxic symptoms may result.

All attempts to cure the malady with serum or antitoxin treatments have so far been unsuccessful.

The latest and most lauded remedy for the cure of pellagra and the so-called specific is found in calcium sulphide. Sulphur seems to neutralize the effects of the linolic acid and the destruction of the tissues is replaced by its associate in the compound, to-wit: calcium.

Calcium sulphide should be given in doses of 1-8 gr., frequently repeated to saturation. This treatment is soon followed by a desquamation of the cutaneous eruption, clearing up of gastro-intestinal symptoms, increased nutrition to the nervous system as furnished by a healthy and enriched condition of the blood.

The much-lauded "606" Erlich's dioxide amido arseno-benzol treatment in pellagra is, sad to say, meeting with disapproval rather than commendation. It seems to be thrown into the circulation in too great dosage for the taxaphone group which it is supposed to counteract, and therefore often produces deleterious if not fatal effect on the unfortunate host.

So, finally, it may be said that we have no specific for the disease, that the remedies used have often proved disappointing, but a cheerful optimism, with the judicious use of the means at our command, will at times produce surprisingly good results and is certainly far preferable to an inert pessimism.

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EDITORIALS**TENNESSEE HEALTH SPECIAL.**

The Health Car of the Agriculture Health-Education Special which was run over the tracks of the Southern Railway from October 16 to November 11 was visited by great numbers of people and tremendous interest was manifested in the displays which the car contained. It is estimated that about 50,000 persons visited the car, and thus the work of the State Board of Health was put before a large part of the population of East Tennessee. Already the good done by such a movement is apparent, the correspondence in the office of the Secretary of the State Board of Health having increased in a way that means that the people were impressed by what they saw in the exhibits of the Health Car, and the number of specimens received for microscopic examination for the diagnosis of hookworm disease and other conditions dependent upon the presence of intestinal parasites indicating that the people of East Tennessee have been awakened to the prevalence of these conditions.

The Health Car contained exhibits on tuberculosis, hookworm disease, typhoid fever, the fly, tuberculosis hospitals, pellagra, sanitary closets, bubbling fountains, individual drinking cups, sanitary paper towels, dustless cleaners, laboratory outfits for physicians and various other subjects.

A working laboratory was carried on the car and a number of microscopic examinations for the diagnosis of tuberculosis, diphtheria, typhoid fever, hookworm disease, malaria and other conditions for the diagnosis of which the microscope is usually relied upon. These examinations were made for physicians and others, with the hope that a sentiment could be built up which

will insure the granting of appropriations for the establishment and maintenance of a hygienic laboratory by our next Legislature. Two cases of diphtheria, several of tuberculosis and quite a number of hookworm disease were diagnosed in this little laboratory, and it is hoped that the people were duly impressed with the value of this work.

The hookworm exhibit and the pellagra exhibit seemed to attract most attention. In the former were bottles containing various intestinal parasites and the pictures of many cases discovered in Tennessee. A part of the exhibit which was used to great advantage, convincing many persons of the seriousness of hookworm disease, was a section of an intestine cut open and so arranged that the parasites could be seen clinging in numbers to the mucous membrane.

As a result of the display of a bubbling fountain several school boards agreed to put the fountains into their schools. The individual drinking cups and sanitary paper towels brought promises from teachers, hotel keepers and others to make an effort to install such facilities.

The models of sanitary closets were examined by thousands of farmers, and numbers of them promised to have them built upon their premises.

The placards bearing information about the nature and prevention of tuberculosis were widely read, and the literature upon this subject was eagerly sought.

About two hundred thousand pieces of literature upon hookworm disease, tuberculosis, typhoid fever, room disinfection, isolation of communicable disease and kindred subjects were distributed.

One of the most popular exhibits was that of the Pure Food and Drugs Department, in which an effort was made to "show up" the adulteration of foods, the "short weight" practice, illegal preservatives, fraudulent patent medicines and other evils which this department is trying so hard to overcome. The literature of this department was freely distributed.

Upwards of one hundred addresses on "Health and Sanitation" were delivered by

the workers on this car. Dr. Geo. White, State Live Stock Inspector, made daily talks on Meat and Dairy Inspection and Diseases Transmitted from Animal to Man.

Dr. Jack Witherspoon was in charge of the laboratory; Dr. T. B. Yancey, Jr., one of the district directors in the hookworm campaign, visited the schools in every town and talked to the teachers and children on subjects pertaining to hygiene; Robert C. Albright was in charge of the case of literature, and all of these gentlemen were extremely busy between times demonstrating the exhibits and answering inquiries of visitors. Dr. Albright and Mr. Jno. Hamel each put in two or three days in hard work on the car. Dr. Olin West was the representative of the Board of Health in charge of the car.

The fact that the Great Southern Railway was willing to furnish this car and free transportation for the gentlemen on board is a gratifying indication that the great industrial companies are alive to the importance of public health work. The representatives of the company present did everything possible to help the work of the Board of Health.

ATTACK ON DR. WILEY CONTINUES.

The "Interests" are still after Dr. Wiley. In spite of his recent public vindication at the hands of the Chief Executive and his present seemingly secure entrenchment in authority, it appears that he is to continue to be made the object of concerted attack by enemies too little or too cowardly to fight in the open.

On the same day (Nov. 1) and by the same mail delivery two letters came to the editor's desk, one from New York, the other from St. Louis. The coincidence proved significant in the light of their contents. The envelopes of both letters were of the same size and appearance, similarly addressed and neither bore any evidence of its source except the postmarks. Both contained bitter attacks upon Dr. Wiley, his character, attainments and efficiency; but neither contained a word or sign by which its origin could be traced. The St. Louis letter con-

sisted simply of a printed page from *Modern Miller*, devoted to a vicious article headed "The Case of Dr. Wiley." The New York letter contained an 8-page pamphlet entitled "The Wiley Controversy: Politics or Pure Food—Which?" which purported to be a reprint from *The Rocky Mountain Druggist*.

The inference is unavoidable that these letters had a common origin and that they are merely the expressions of an organized effort to discredit Dr. Wiley and the magnificent work he has done in protecting the people from the further imposition of unscrupulous tradesmen. Working in the dark as they must because of the infamous character of the interests they serve, they still have all the power for mischief which cunning can devise and money render effective. It is happily improbable, however, that any reputable publication, whether lay or medical, will allow itself to be influenced by anonymous attacks of the kind to which we now refer.

In a recent issue we took occasion to call attention and pay our respects to the organized opposition to the establishment of a national department of health. The fight on Dr. Wiley belongs in the same unsavory category, for the cause he represents is the health of ninety million people. No one would claim that he is infallible—that he has not and will not continue to make mistakes. But those who have kept in touch with the matter, if there were no more positive reasons, must love and admire him for the enemies he has made. A. B. C.

A NEW IMPETUS SUGGESTED.

After carefully reviewing the course of post-graduate study suggested by the American Medical Association, for the use of county societies, the writer was struck by the necessity for careful microscopic and other laboratory aids which are so essential to correct diagnosis. To be equipped for this class of work it is necessary to visit the better medical colleges either here or abroad, which is often impossible, and the expense to many prohibitive. The Johns Hopkins University has for some time prac-

ticed the plan of sending capable teachers to various towns in Maryland, equipped with the proper apparatus to give instruction in clinical diagnosis. The University of Colorado is considering plans along the same line and the movement promises to become more or less general. We heartily endorse the plan and would urge the county societies to discuss this phase of their post-graduate work, and instruct the delegates to take the matter up with the State body at its next meeting in Chattanooga. If the demand for such instruction seemed to warrant it, the officers of the State Society might be delegated to make some arrangement with our leading medical colleges for such instruction.

"VENEREAL PROPHYLAXIS OR SOCIAL HYGIENE."

The editor was recently asked to meet a committee of physicians and ministers at the Young Women's Christian Association, to meet Dr. Rachelle Yarras, of Chicago, and to discuss with her the feasibility of establishing in Nashville a branch of the national organization for instruction in Social Hygiene.

The meeting resulted in temporary organization with the election of temporary officers, who will take steps immediately towards permanent organization.

There is much to be done along these lines, and while we must confess that at first we were exceedingly skeptical as to the practical nature of this work, we are now convinced that intensely practical results are possible of attainment and much good to humanity result therefrom.

The medical profession have in a way been an impediment to progress along these lines, and while it is true that they have furnished the scientific data, they have not given to these movements the full support to which they are entitled. It is further true that venereologists, who, better than any other men, know the ravages of these diseases, are, with a few notable exceptions, the very ones who cry out, "It is useless." Belonging to that class who really

believed it a waste of energy, we gave the subject some thought and study and have arrived at very different conclusions.

We now believe that education, which is a sovereign balm in so many other instances, offers the greatest hope. These diseases bring untold misery to a large proportion of the community, rendering great numbers of citizens inefficient, and transmitting their calamities to wholly innocent parties. They are diseases, the phenomena and far-reaching miseries of which are known with certainty, they can be perfectly well avoided; and when contracted, can be greatly limited both in their early manifestations and in their late effects. Yet, they are diseases, about which even the educated classes are wholly uninformed or woefully misinformed; while the masses depend for their information on the unintelligent mouthings of alarmist quacks.

The laity must be educated, but the problem is both delicate and difficult. The organization proposes to begin instruction in the school and give to the pupils correct information as to the dangers; to the public by means of printed guides or lessons which may be circulated, by articles carefully written and published in lay magazines, by the encouragement of municipalities in the establishment of venereal dispensaries, by reasonable, sane and effective methods to regulate prostitution, by the passage of laws to protect innocent infections as occur occasionally from the public drinking cup, amongst glass-blowers and like occupations. They propose to concern themselves with social problems, which no thinking man can deny are indissolubly linked with the venereal evil. Female pauperism, improvement of tenement districts, wholesome amusements for the poor and the alcohol problem shall receive their proportionate needs in an educational and practical campaign for their betterment. The German saying, (*Aus der zwei V, Vinum and Venus, entsteht ein grosses W (Weh)*) (between wine and women stands sorrow) is sufficient warrant to justify these courageous workers to approach the alcohol problem from this angle.

While the writer is in perfect sympathy with this movement as it concerns the many problems above mentioned, he realizes the futility of other suggestions, which in certain instances have already become laws, "marriage license issued with a certificate of health in Indiana," for example. The right of the physician to reveal a professional secret, given to him by virtue of this right, and the power of the State to invade this domain, are not yet conceded. It is the physician's duty to use every effort in his power to prevent an infected subject transmitting his infection to another, but beyond this his professional rights do not extend.

The physician should not be content and feel his duty done when he has admonished a wayward youth and given him a few elementary hygienic details, but he should lend his assistance to this cause, not only by his presence, his counsel and advice, but by volunteering in the service and joining the ranks as a worker for social betterment.

GALLOWAY HOSPITAL.

Nashville has just closed a successful whirlwind campaign during which \$150,000 was subscribed by its liberal and loyal citizens, for the erection of the first unit of the Galloway Memorial Hospital.

This promises to be but the beginning and unit after unit will be added until Nashville may boast of having the finest hospital in the South. The directors guarantee to provide for one hundred charity beds, and to equip the new institution with every modern appliance necessary for complete scientific investigation of disease. Laboratory facilities, under the direction of the Medical Department of Vanderbilt University, are provided free of all cost to the charity department and guaranteed by the university in return for clinical privileges. These same facilities are at the command of the pay department at a nominal expense. Approximately four acres of the south campus (formerly Peabody campus), was donated by Vanderbilt University and the erection of the first unit will soon be

begun. This unit will be for administration headquarters and for both pay and charity patients. The directors promise that the second unit shall be entirely for charity patients.

We most heartily commend the gentlemen at the head of this enterprise for their untiring efforts and congratulate them upon their success.

DEATHS

We regret to report the death of Dr. Walter Wyman, Surgeon-General of the United States Public Health and Marine Hospital Service, who died at Providence Hospital, Washington, D. C., November 21, after an illness of several months. He is survived by his mother, three brothers and one sister.

Dr. Wyman was a member of the leading American and International Medical Societies.

NEWS NOTES AND COMMENT

Dr. Willard Steele, of Chattanooga, went to Europe in October. His wife, who was Miss Kate Hinds, of Lebanon, accompanied him. Dr. Steele will take a post-graduate study and work in some of the great eye, ear, nose and throat hospitals of London and Vienna. His wife will study art. They will return to Chattanooga next May or June, where he will be associated with his father, Dr. N. C. Steele.

A young man claiming to be a law student and playwright, by the name of Harry Krellburg, recently visited Chattanooga, winning the friendship of a number of prominent men, among whom was Dr. E. E. Reisman, who lost \$158 by his friendship. Dr. Reisman not only did about \$100 worth of practice for him, but also stood for his hospital bill. After circulating about \$600 worth of bogus checks, Krellburg left Chattanooga, and no news of him has reached that city since his departure.

Five counties in Tennessee have made appropriations to establish dispensaries for the free treatment of hookworm disease. At the regular quarterly courts in October, White, Warren, Pickett, Fentress and Clay counties granted these appropriations. The dispensaries have been opened in White, Warren and Fentress counties and the number of cases treated thus far indicates that a great work will be done toward the eradication of hookworm disease and for the improvement of rural sanitation.

"Pellagra—A Report Upon 316 Cases of This Disease as Submitted by the Commission Appointed by the Tennessee State Board of Health" is just off the press and will be sent upon request to any physician in the state. This is a study of the cases personally visited by the members of the Commission and will be found of interest. While no definite conclusions are drawn in regard to the causation of pellagra, the information contained in this report is valuable and pointed out the need for further investigation in our own state by our own men.

Drs. W. D. Haggard, L. E. Burch, Duncan Eve, Jr., T. G. Pollard and J. F. Gallagher, of Nashville, attended the Surgical Congress at Philadelphia during the latter part of November.

Doctor, please do not neglect reporting to your Health Officer.

Dr. C. F. Hoover, of Cleveland, Ohio, addressed the Nashville Academy of Medicine the evening of November 7, on the subject of "Surgery and Basedow's Disease." Dr. Hoover's address was an able and highly scientific one and was greatly enjoyed by all who attended. Dr. Hoover was the guest of Dr. J. A. Witherspoon while in the city.

Dr. George R. West, of Chattanooga, was operated upon for cholecystitis on November 15 at the University Hospital, West Philadelphia. He is reported as doing nicely.

Dr. Louis Leroy and Dr. Albright, of the State Board of Health, and Dr. Krauss, of the Pellagra Commission, are attending the Southern Medical Association at Hattiesburg, Miss., and will read papers before that society.

Dr. W. S. Farmer, of Cookeville, Tennessee, reports on the administration of heroic doses of antitoxin in a recent epidemic of diphtheria. To one little girl, four years of age, suffering from laryngeal diphtheria, after intubation, he injected within one week sixty-seven thousand and five hundred units of antitoxin. He gave seven doses of 7500 each and three doses of 5000 each every eight, twelve and twenty-four hours until the disease was conquered.

He thinks possibly this is the largest amount of antitoxin that has been administered to any child of similar age in Tennessee.

We congratulate Dr. Farmer upon his courage in the use of this valuable remedy and believe with him in the use of large doses frequently repeated. The writer has no personal knowledge of similar large amounts having been administered in this state and believes that Dr. Farmer is entitled to full credit.

Drs. B. S. Wert and E. E. Reisman, of Chattanooga, had a miraculous escape from death or serious injury on November 2, when an automobile in which they were riding was practically destroyed in Chickamauga Park. They were going fifty miles an hour, and in turning a curve smashed into a telephone pole. Both were thrown forward, one through the wind shield, the other into a field nearby. Only the slightest injuries were sustained.

Miss Isabel McIsaacs, Interstate Secretary of the American Nurses' Association, arrived in Nashville, November 23, as the guest of the Nashville Nurses' Association, and delivered two scheduled lectures at the Y. W. C. A. Auditorium. She spoke in the afternoon on the nurses' organizations of the country and the improving of training

along that line. She emphasized the need for a better nursing education, and plead for a better understanding of the profession of the trained nurse on the part of society and the world at large.

Miss McIsaacs is touring the Southern States and speaking before the nurses' associations, training schools for nurses, and other organizations interested in nursing.

An elaborate dinner was given at six o'clock at the Hermitage Hotel in her honor by the Nashville Nurses' Association. She left Nashville, November 24, for Knoxville and Memphis, after which she will visit all the States throughout the South and West.

MARRIED.

The marriage of Miss Cecil Scott to Dr. Joseph S. Dozier, both of Nashville, took place at McTyeire Memorial Church, November 23.

SOCIETY PROCEEDINGS

HAMILTON COUNTY.

The weekly meeting of the Chattanooga Academy of Medicine and Hamilton County Medical Society was held November 24, 1911, at 8 p.m.

President James H. Atlee presided. Roll of members called, the following being present, viz.: E. B. Anderson, J. S. Dye, T. E. Abernathy, Vaulx Gibbs, Bayard Sullivan, J. B. Steele, L. C. Williamson, B. A. Deakins, Raymond Wallace, J. N. Broyles, B. S. Wert, H. B. Wilson, E. H. Byrd, C. B. Wylie, J. M. Macquillan, J. C. Brooks, F. D. Newell, P. T. Smith, J. J. Gee, B. G. Allen, C. H. Gurney, E. T. Newell, J. B. Haskins, S. H. Barrett, H. L. Fancher, Y. L. Abernathy, C. V. Williams, C. R. Martin, F. B. Stapp, J. H. Atlee and H. P. Larimore. Visitors present were: Dr. Olin West, Assistant Secretary Tennessee State Board of Health, Nashville, Tenn.; Dr. W. K. Bartlett, Captain Medical Corps, Eleventh Cavalry, Fort Oglethorpe; Drs. H. Quigg Fletcher and A. P. Ingalls, city; Superintendent J. B. Brown, of the Hamilton County schools, and Superintendent D.

A. Graves, of city schools. Minutes of the last regular meeting were read and approved. Application for membership was read from Dr. H. Quigg Fletcher, James Building, city, graduate Johns Hopkins, class of 1909. A letter was read from Dr. George R. West, who is still in Philadelphia, where he was recently operated upon, acknowledging receipt of the Society's postal card "shower," and expressing his sincere appreciation. It was agreed that the Treasurer pay the hall janitor a small sum approximating 75 cents per meeting night for his services. Interesting cases were reported and discussed by Drs. Y. L. Abernathy, E. D. Newell, J. W. MacQuillan, J. S. Dye, E. T. Newell, H. L. Fancher and Raymond Wallace. Dr. Olin West, of Nashville, delivered a most interesting and instructive address on "Hookworm Disease." He also spoke of health matters in general, the work and needs of the State Board of Health and of the legislation desired, success in all these matters depending in large measure upon the degree of cooperation accorded by the medical profession of Tennessee. Discussion by Drs. Jno. B. Steele, T. E. Abernathy, J. S. Dye, J. C. Brooks and W. K. Bartlett, and Superintendents Brown and Graves. The Society adjourned.

H. P. LARIMORE,
Secretary.

WHITE COUNTY.

White County Medical Society held its regular meeting November 9, in Dr. A. F. Richard's office with the following members present: Drs. W. T. Brock, W. B. Cantrell, S. E. Gaines, J. R. Gott, W. M. Johnson and A. F. Richards. As there was no essayist present, the meeting was devoted to "Reports of Cases" and "Query Box," which consumed the time pleasantly and profitably.

The program for the December meeting is as follows: Paper by Dr. L. D. Cotten; paper on "Ovaritis," by Dr. W. B. Cantrell; "Reports of Clinical Cases and Query Box," and election of officers for 1912.

A. F. RICHARDS, *Secretary.*

PUTNAM COUNTY.

The Putnam County Medical Society held its regular meeting at the court house on the first Thursday of November. The President, Dr. Adams, presided. A very interesting paper on the subject of "Uterine Displacements" was read by Dr. Y. L. Shipley and discussed by Drs. Ensor, Dyer, Farmer, Moore, Storie and Curtis. Dr. T. J. Moore reported cases of diphtheria which were well discussed by all present.

The papers for the next regular meeting are as follows: "Sputum," by Dr. Scott Farmer; "Tubercular Children," by Dr. H. C. Curtis; "Pellagra," by Dr. J. R. Storie.

H. C. CURTIS, *Secretary*.

BOOKS RECEIVED.

CASE HISTORIES IN NEUROLOGY. A selection of histories setting forth the Diagnosis and Post Mortem finding in Nervous Diseases. By E. W. Taylor, A.M., M.D., Instructor in Neurology, Harvard Medical School; Assistant Physician Department of Neurology, Massachusetts General Hospital; Visiting Neurologist, Long Island Hospital, Boston. W. M. Leonard, Publisher, Boston.

THE FOURTH PHYSICIAN, a Christmas Story by Montgomery Pickett, with illustrations by Gordon Stevenson. A. G. McClurg & Company, Publishers, New York and San Francisco.

MEDICAL COMMUNICATIONS OF THE MASSACHUSETTS MEDICAL SOCIETY. Vol. XXII. Printed for the Society by David Clapp & Son, 291 Congress St., Boston. The Proceedings of the Council and of the Society, and a Directory of the Officers and Fellows of the Society. July 1, 1911, have been published as a separate volume.

Fellows who have not received this volume will kindly notify the librarian, who will furnish them with a copy.

THE PRACTITIONER'S VISITING LIST FOR 1912. An invaluable pocket-sized book containing memoranda and data important for every physician, and ruled blanks for recording every detail of practice. The Weekly, Monthly, and 30-Patient Perpetual contain 32 pages of data and 160 pages of classified blanks. The 60-Patient Perpetual consists of 256 pages of blanks alone. Each in one wallet-shaped book, bound in flexible leather, with flap and pocket, pencil with rubber, and calendar for two years. Price by mail, postpaid, to any address, \$1.25. Thumb-letter index, 25 cents extra. Descriptive circular showing the several styles sent on request. Lea & Febiger, Publishers, Philadelphia and New York.

BOOKS REVIEWED.

THE SEXUAL LIFE OF WOMAN, in Its Physiological, Pathological, and Hygienic Aspects. By E. Heinrich Kisch, M.D., Professor of the German Medical Faculty of the University of Prague; Physician to the Hospital and Spa of Marienbad; Member of the Board of Health, etc. Translated into English by M.

Eden Paul, M.D. Rebman Company, New York Price, \$5.00.

As is truly said in the preface of this excellent work: "The sexual life of woman—the appearance of the first indications of sexual activity, the development of that activity and its culmination in sexual maturity, the decline of that activity and its ultimate extinction in sexual death—the entire process of the most perfect work of natural creation—has throughout all ages kindled the inspiration of poets, aroused the enthusiasm of artists, and supplied thinkers with inexhaustible material for reflection."

The book fulfills its mission, which is purely educational and contains much matter difficult to lay hands on in a professional man's library.

It is a book intended for physicians, but "more's the pity" that the public at large are not yet sufficiently educated to appreciate its many splendid chapters and to gain that knowledge which we as physicians so often see the need of. General education along the lines of sex and its influence will some day be required, but we regret it is not yet come—until then the many treats to be found in the pages of the above masterful exposition of the subject, must be left to the enjoyment of men of science. Any attempt to critically analyse the work would be futile, it must be read to be appreciated.

With the exception of a few errors in proof reading, the work is well printed and the illustrations are clear and accurate.

STATE MEMBERSHIP LIST

THE TENNESSEE STATE MEDICAL ASSOCIATION.

A complete list of those who have paid Association dues for 1911 will be published in this and occasionally in succeeding numbers of the Journal. The list published below includes only those whose dues were received by the Treasurer up to Nov. 1. Errors in name or address should be reported to Secretary Bromberg at once to facilitate prompt correction.

This list, as published, constitutes the mailing list of the Journal, and any member failing to receive his Journal is requested to write for a duplicate copy. No name has been intentionally left off. If your name does not appear, be kind enough to notify the Secretary, so that he may make the correction.

Name	Address	County
Beasley, E. M.,	Coal Creek	Anderson
Carden, W. L.,	Andersonville	Anderson
Cox, Joe M.,	Edgemore	Anderson
Ellin, W. E.,	Wind Rock	Anderson
Ford, E. H.,	Coal Creek	Anderson
Hall, S. B.,	Clinton	Anderson
Haun, L. A.,	Pres., Coal Creek	Anderson
Hayes, J. T.,	Oliver Springs	Anderson
Hicks, H. D.,	Clinton	Anderson
Lambdin, L.,	Andersonville	Anderson
Morgan, Carroll H.,	Pless	Anderson
Phillips, Thos. H.,	Secy., Briceville	Anderson
Richards, W. D.,	Briceville	Anderson
Taylor, J. G.,	Clinton	Anderson
Coble, T. J.,	Shelbyville	Bedford
Dyer, J. H.,	Wartrace	Bedford
Freeman, J. K.,	Bellbuckle	Bedford
Frierson, W. G.,	Shelbyville	Bedford

Name	Address	County	Name	Address	County
Horton, G. E., Pres., Wartrace	Bedford	Bell, C. Bailey, 135 8th Ave., N., Nash-	Davidson		
Landis, G. L., Unionville	Bedford	ville			
Moody, G. W., Shelbyville	Bedford	Billington, R. W., Worthington Flats,	Davidson		
Moody, S. S., Shelbyville	Bedford	Nashville			
Moon, W. A., Bellbuckle	Bedford	Black, W. G., 1421 Church St., Nash-	Davidson		
Orr, W. M., Shelbyville, R. F. D. 1	Bedford	ville			
Pyatt, W. S., Normandy	Bedford	Bloomstein, S. M., Worthington Flats,	Davidson		
Patton, E. W., Wartrace	Bedford	Nashville			
Ray, T. R., Normandy	Bedford	Briggs, W. T., Cor. Union and 5th Ave.,	Davidson		
Robinson, W. T., R. F. D. No. 7, Shelby-	Bedford	Nashville			
ville		Britt, B. E., Jackson Bldg., Nashville	Davidson		
Reagor, F. B., Secy., Shelbyville	Bedford	Bromberg, Perry, Jackson Bldg., Nash.	Davidson		
Sharp, W. T., Shelbyville, R. F. D. 1	Bedford	ville			
Sunstrom, C. A. G., Beech Grove	Bedford	Bryan, W. A., 146 8th Ave., N., Nash-	Davidson		
Taylor, J. P., Haley	Bedford	ville			
Woods, T. H., Bellbuckle	Bedford	Bryan, O. N., 146 8th Ave., N., Nash-	Davidson		
Fisher, R. J., Unionville	Bedford	ville			
Bean, R. L., Cleveland	Bradley	Brooks, H. T., 1024 S. 2nd Ave., Nash-	Davidson		
Chambers, T. E. P., Secy., Cleveland	Bradley	ville			
Gates, B. F., Cleveland	Bradley	Brown, C. W., 418 Monroe St., Nashville	Davidson		
Kibler, R. O., Cleveland	Bradley	Brush, C. E., 118 N. 8th Ave., Nashville	Davidson		
McKamy, T. J., Cleveland	Bradley	Buckner, M. G., Jackson Bldg., Nashville	Davidson		
Quinn, B. A., Cleveland	Bradley	Buist, W. E., 213 8th Ave., N., Nashville	Davidson		
Ramsey, G. A., Cleveland	Bradley	Burch, L. E., 120 8th Ave., N., Nashville	Davidson		
Sullivan, R. T., Cleveland	Bradley	Caldwell, Robt., Pres., Jackson Bldg.,	Davidson		
Schultz, H. W., Cleveland	Bradley	Nashville			
Speck, C. T., Pres., Cleveland	Bradley	Coles, Van H., 1505 Church St., Nash-	Davidson		
Slugart, J. L., Cleveland	Bradley	ville			
Sullivan, W. H., Tasso	Bradley	Cooke, A. B., Jackson Bldg., Nashville	Davidson		
Taylor, R. L., Cleveland	Bradley	Cowden, C. N., Eve Bldg., Nashville	Davidson		
Brown, B. B., Peabody	Campbell	Crockett, S. S., Jackson Bldg., Nashville	Davidson		
Gallagher, R. L., Careyville	Campbell	Crawford, J. P., Commerce and 8th	Davidson		
Hefferman, R. L., Jellico	Campbell	Ave., Nashville			
Lawson, A. L., Elk Valley	Campbell	Cullom, M. M., Hitchcock Bldg., Nash-	Davidson		
Lane, J. F., Woodridge	Campbell	ville			
McClintock, F. A., Secy., Newcomb	Campbell	Dabney, A. S., Eve Bldg., Nashville	Davidson		
Newman, A. T., Jellico	Campbell	Dake, Richard W., 216 7th Ave., N.,	Davidson		
Potter, W. W., Westbourne	Campbell	Nashville			
Queener, S. D., Jasboro	Campbell	Davis, M. O., 140 8th Ave., N., Nash-	Davidson		
Rose, J. L., Jellico	Campbell	ville			
Robbins, H. M., Jellico	Campbell	DeWitt, Paul, Hitchcock Bldg., Nash-	Davidson		
Scott, L. M., Pres., Jellico	Campbell	ville			
Snyder, S. B., Jellico	Campbell	Dixon, W. C., Secy., 150 8th Ave., N.,	Davidson		
Yeatts, S. T., Atherton Bldg., Louisville,	Campbell	Nashville			
Ky.		Doak, R. S., 139 8th Ave., N., Nashville	Davidson		
Bryant, G. C., McLemoresville	Carroll	Douglas, A. E., Central Hospital, Nash-	Davidson		
Jemison, A. B., Trezevant	Carroll	ville			
McCall, J. W., Huntingdon	Carroll	Evans, N. G., Madison Station	Davidson		
Wright, W. M., Huntingdon	Carroll	Edwards, G. P., Jackson Bldg., Nashville	Davidson		
Cook, H. W., Alamo	Crockett	Eve, Duncan, Eve Bldg., Nashville	Davidson		
Conyers, D. J., Chestnut Bluff	Crockett	Eve, Duncan, Jr., Eve Bldg., Nashville	Davidson		
Dodds, O. L., Eaton	Crockett	Eve, Paul F., Eve Bldg., Nashville	Davidson		
Eason, W. B., Bells	Crockett	Fort, R. E., 209 7th Ave., N., Nashville	Davidson		
Goodwin, I. L., Halls	Crockett	Gaines, Jno. A., Jackson Bldg., Nashville	Davidson		
Harris, J. H., Bells	Crockett	Gallagher, J. F., Jackson Bldg., Nash-	Davidson		
James, F. C., Gadsden	Crockett	ville			
Love, C. T., Pres., Alamo	Crockett	George, L., Loma Linda, Cal.	Davidson		
McDonald, S. E., Secy., Bells	Crockett	George, W. A., Loma Linda, Cal.	Davidson		
Oneil, M. E., Bells, R. F. D.	Crockett	Glenn, W. F., 1st Natl. Bank Bldg.,	Davidson		
Powell, Jno. L., Friendship	Crockett	Nashville			
Revelle, D. A., Maury City	Crockett	Glasgow, McP., Worthington Flats,	Davidson		
Spence, W. L., Chestnut Bluff	Crockett	Nashville			
Tullos, A. M., Gadsden	Crockett	Gleaves, E. L., 142 6th Ave., N., Nash-	Davidson		
Hager, J. F., Isoline	Cumberland	ville			
Lewis, V. L., Pres., Crossville	Cumberland	Goodwin, J. D., 1012 1st Natl. Bank	Davidson		
McCamy, W. R., Crab Orchard	Cumberland	Bldg., Nashville			
McClarney, A. J., Crossville	Cumberland	Grizzard, R. W., 302 6th Ave., N., Nash-	Davidson		
Mitchell, E. W., Crossville	Cumberland	ville			
Southard, Dallas, Sec'y., Crossville	Cumberland	Haggard, W. D., 148 8th Ave., N., Nash-	Davidson		
Altman, J. T., Eve Bldg., Nashville	Davidson	ville			
Anderson, C. F., Eve Bldg., Nashville	Davidson	Hale, G. W., Wilcox Bldg., Nashville	Davidson		
Anderson, W. B., Broad and 12th Aves.,	Davidson	Handley, J. W., 1st Natl. Bank Bldg.,	Davidson		
Nashville		Nashville			
Bailey, Wm., Jackson Bldg., Nashville	Davidson	Hargis, W. A., R. R. Del., Hermitage	Davidson		
Barr, R. A., 1st Natl. Bank Bldg., Nash-	Davidson	Harris, A. W., 142 7th Ave., N., Nash-	Davidson		
ville		ville			

Name	Address	County
Guerin, H. C., 2004 Nashville	20th Ave., S., Nashville	Davidson
Harris, J. E., P. O. Box 404, Nashville		Davidson
Harrington, R. A., 8th Ave. and Broadway, Nashville		Davidson
Hatcher, G. E., Cent. Hosp. for Insane, Nashville		Davidson
Head, F. F., West Nashville		Davidson
Hibbett, W. E., Waverly Place, Nashville		Davidson
Hill, C. L., Edgar Jones Ave., Nashville		Davidson
Hollabaugh, A. N., 801 5th Ave., S., Nashville		Davidson
Hubbard, G. W., 112 Maple St., Nashville		Davidson
Hudson, Alberto, Jackson Bldg., Nashville		Davidson
Jeck, H. S., 1208 4th Ave., S., Nashville		Davidson
Jones, R. L., 151 8th Ave., N., Nashville		Davidson
Keys, Richard, Murray, Ky.		Davidson
Keller, J. P., Worthington Flats, Nashville		Davidson
King, J. M., Eve Bldg., Nashville		Davidson
Lee, W. B., Jackson Bldg., Nashville		Davidson
Leonard, N. C., Eve Bldg., Nashville		Davidson
Litterer, William, Vanderbilt Med. Col., Nashville		Davidson
Levy, Louis, Brooklyn Eye, Ear, Nose and Throat Hospital, Brooklyn, N. Y.		Davidson
Lee, J. M., 1107 Sigler St., Nashville		Davidson
McCampbell, W. E., 6th and Woodland Sts., Nashville		Davidson
McGannon, M. C., 118 8th Ave., N., Nashville		Davidson
Maddin, J., 169 4th Ave., N., Nashville		Davidson
McCabe, W. M., City Hospital, Nashville		Davidson
Magan, Lillian E., Madison		Davidson
Marr, Harrington, Mill Block, Church, Nashville		Davidson
Meadows, Joe T., 1st Natl. Bank Bldg., Nashville		Davidson
Miller, J. P., Cumberland Valley National Bank Bldg., Nashville		Davidson
Morgan, H. W., 211 6th Ave., N., Nashville		Davidson
Moore, J. W., 146 8th Ave., N., Nashville		Davidson
Morrison, W. J., 8th Ave. and Commerce, Nashville		Davidson
Minor, Dabney, 1201 Broadway, Nashville		Davidson
Neil, D. R., Jackson Bldg., Nashville		Davidson
Nichol, A. G., Jackson Bldg., Nashville		Davidson
Noel, L. G., 529½ Church St., Nashville		Davidson
O'Callahan, W. J., Post Office, Nashville		Davidson
Overton, John, Douglas Infirmary, Nashville		Davidson
Oughterson, W. A., 135 8th Ave., N., Nashville		Davidson
Owsley, J. Q., 420½ Union St., Nashville		Davidson
Omohundro, O. C., Nashville		Davidson
Padgett, Hazle, Hitchcock Bldg., Nashville		Davidson
Pickens, D. R., 135 8th Ave., N., Nashville		Davidson
Plunkett, J. D., 701½ Church St., Nashville		Davidson
Pollard, T. G., 135 8th Ave., N., Nashville		Davidson
Price, Geo. H., 146 8th Ave., N., Nashville		Davidson
Parrish, W. A., Campbellville, Fla.		Davidson
Roberts, Deering J., 420½ Union, Nashville		Davidson
Robertson, C. A., 151 8th Ave., N., Nashville		Davidson

Name	Address	County
Roberts, E. L., 131 8th Ave., N., Nashville		Davidson
Sharber, A. L., 142 7th Ave., N., Nashville		Davidson
Sanders, E. M., 148 7th Ave., N., Nashville		Davidson
Savage, G. C., 139 8th Ave., N., Nashville		Davidson
Sayers, E. A., Jackson Bldg., Nashville		Davidson
Shannon, T. G., Woodland and 4th, Nashville		Davidson
Sifford, W. R., 1st Natl. Bank Bldg., Nashville		Davidson
Smith, Larkin, 131 8th Ave., N., Nashville		Davidson
Stevens, Jno. W., R. F. D. 1, Nashville		Davidson
Stonestreet, Reginald, Hitchcock Bldg., Nashville		Davidson
Sullivan, C. C., 131 8th Ave., N., Nashville		Davidson
Sumpter, W. D., 131 8th Ave., N., Nashville		Davidson
Sneed, W. L., Hospital for Ruptured and Crippled, New York City		Davidson
Shoulders, H. S., 225 Highland St., Nashville		Davidson
Shoulders, H. H., Fort's Infirmary, Nashville		Davidson
Tankesley, W. H., Waverly Place, Nashville		Davidson
Teachout, S. R., Eve Bldg., Nashville		Davidson
Tigert, H. M., Worthington Flats, Nashville		Davidson
Toy, S. H., 1409 9th Ave., S., Nashville		Davidson
Trawick, G. C., Jackson Bldg., Nashville		Davidson
Tucker, B. G., 302 S. 10th St., Nashville		Davidson
Tucker, R. O., Worthington Flats, Nashville		Davidson
Thach, A. B., 148 7th Ave., N., Nashville		Davidson
Tidwell, G. W., 131 8th Ave., N., Nashville		Davidson
Weaver, Thos., Jackson Bldg., Nashville		Davidson
West, Olin, State Capitol, Nashville		Davidson
White, Geo. R., 24 Bridge Ave., Nashville		Davidson
White, Gordon, 610½ Church St., Nashville		Davidson
Willson, O. H., Worthington Flats, Nashville		Davidson
Witherspoon, Jno. A., 150 8th Ave., N., Nashville		Davidson
Witt, W. H., Worthington Flats, Nashville		Davidson
Wood, T. Hillard, 1st Natl. Bank Bldg., Nashville		Davidson
Loring, Chas., Smithville		DeKalb
Potter, T. J., Pres., Smithville		DeKalb
Parker, W. B., Secy., Smithville		DeKalb
Parker, W. W., Smithville		DeKalb
Flowers, J. C., Dickson		Dickson
Harper, T. M., Dickson		Dickson
Scott, W. S., Dickson		Dickson
Suggs, W. J., Pres., Dickson		Dickson
Walker, W. W., Secy., Dickson		Dickson
Weaver, H., Dickson		Dickson
Brewer, J. D., Newbern		Dyer
Cherry, E. O., Newbern		Dyer
Dulaney, O., Pres., Dyersburg		Dyer
Dees, H. E., Tiger Tail		Dyer
Edwards, Luther, Finley		Dyer
Flanary, D. L., Dyersburg		Dyer
Fowlkes, J. A., Dyersburg		Dyer
Haskins, E. T., Newbern		Dyer
Hicks, H. E., Newbern		Dyer
Holland, W. W., Dyersburg		Dyer
McDavid, Paul, Minglewood		Dyer

Name	Address	County	Name	Address	County
Morgan, G. D., Laue		Dyer	Britton, F. C., Greenville, R. F. D. 9....	Green	
Moody, A. H., Secy., Dyersburg		Dyer	Brumley, S. T., Greenville, R. F. D.	Green	
Rawles, E. L., Dyersburg		Dyer	Bailey, G. N., Baileytown	.....	Green
Rawles, I. N., Dyersburg		Dyer	Brown, I. B., Mosheim, R. F. D.	Green	
Price, J. G., Dyersburg		Dyer	Borden, H. S., Greenville, R. F. D. 2....	Green	
Turner, C. A., Dyersburg		Dyer	Bell, Jas. B., Pres., Greenville, R. F. D. 2..	Green	
Walker, N. S., Dyersburg		Dyer	Blanton, M. A., Secy., Baileytown, R. F. D. 1.	Green	
Walker, T. J., Dyersburg		Dyer	Cloyd, J. W., Mosheim, ...	Green	
Watson, W. P., Dyersburg		Dyer	Fox, C. P., Greenville	.....	Green
Williamson, Edd., Finley		Dyer	Hays, G. S., Greenville	.....	Green
Wynne, J. W., Newbern		Dyer	Hawkins, W. H., Greenville	.....	Green
Albright, J. A., Somerville		Fayette	Huffaker, R. O., Chucky City	.....	Green
Boals, A. O., Pres., Somerville		Fayette	Hughes, J. B., Jeraldstown	.....	Green
Crook, C. N., Somerville		Fayette	Holt, J. S., Midway	.....	Green
Moorman, H. C., Secy., Somerville		Fayette	Jeffers, W. L., Baileytown	.....	Green
Robertson, C. W., Somerville		Fayette	Myers, E. M., Bulls Gap	.....	Green
Bennett, B. T., Trenton		Gibson	Ruble, H. H., Greenville	.....	Green
Caldwell, B. D., Milan		Gibson	Robinson, F. P., Greenville, R. F. D.	Green	
Clopton, A. T., Milan		Gibson	Simpson, H. A., Baileytown, R. F. D.	Green	
Cochran, T. N., Trenton		Gibson	Taylor, Wm. B., Greenville	.....	Green
Dodds, G. W., Trenton		Gibson	Taylor, H. M., Greenville	.....	Green
Faucett, J. T., Trenton		Gibson	Woolsey, Thos. H., Greenville, R. F. D.	Green	
Hunt, R. H., Humboldt		Gibson	Wilhoit, J. S. J., Afton, R. F. D.	Green	
Harwood, T. E., Trenton		Gibson	Woodyard, S. W., Greenville	.....	Green
McRee, W. C., Secy., Trenton		Gibson	Bales, Thos. E., Morristown	.....	Hamblen
Moore, J. C., Trenton		Gibson	Brown, J. H., Talbots	.....	Hamblen
Medling, W. L., Dyer		Gibson	Cass, H. M., Morristown	.....	Hamblen
Matthews, E. C., Trenton		Gibson	Dice, J. B. F., Morristown	.....	Hamblen
Penn, B. S., Pres., Humboldt		Gibson	Henderson, P. L., Morristown	.....	Hamblen
Penn, G. W., Humboldt		Gibson	Howell, W. E., Morristown	.....	Hamblen
Preston, J. H., Humboldt		Gibson	Manard, J. J., Morristown	.....	Hamblen
Preston, W. F., Humboldt		Gibson	Milligan, L. H., Morristown	.....	Hamblen
Paris, Jno. C., Kenton		Gibson	Painter, F. F., Morristown	.....	Hamblen
Oliver, G. W., Medina		Gibson	Pangle, H. G., Russellville	.....	Hamblen
Rozelle, J. H., Gibson		Gibson	Ruble, W. G., Morristown, Secy.	Hamblen	
Thompson, Sidney, Humboldt		Gibson	Shields, D. E., Morristown, Pres.	Hamblen	
Walker, D. A., Trenton		Gibson	Tidwell, R. S., Tate Springs	.....	Hamblen
Wyatt, F. E., Yorkville		Gibson	Walker, I. D., Alpha	.....	Hamblen
Tyree, C. E., Trenton		Gibson	Woods, J. O., Morristown	.....	Hamblen
Abernathy, C. A., Pulaski		Giles	Abernathy, Thos. E., Bates Block, Chat- tanooga	.....	Hamilton
Abernathy, W. D., Pulaski		Giles	Abernathy, Y. L., Hill City, Chattanooga	.....	Hamilton
Abernathy, Shields, Secy., Pulaski		Giles	Allen, Benj. G., 211 East 8th St., Chat- tanooga	.....	Hamilton
Allen, A. M., Buford Station		Giles	Anderson, E. B., over 739 Market St., Chattanooga	.....	Hamilton
Baugh, Jno. E., Elkton		Giles	Anderson, E. C., Highland Park Station, Chattanooga	.....	Hamilton
Black, Wm. E., Minor Hill		Giles	Anderson, W. E., James Bldg., Chatta- nooga	.....	Hamilton
Blackburn, Jas. K., Pulaski		Giles	Applegate, W. A., 300 Pennsylvania Ave., Chattanooga	.....	Hamilton
Butler, Geo. D., Pulaski		Giles	Atlee, Jas. H., Pres., 219 Oak St., Chatta- nooga	.....	Hamilton
Cole, Wm. H., Minor Hill		Giles	Banks, W. A., 313 Chamberlain Ave., Chattanooga	.....	Hamilton
Copeland, W. F., Campbellsville		Giles	Barker, H. M., Alton Park	.....	Hamilton
Dean, Allen W., Brick Church		Giles	Bell, Jas. T., Daisy, Tenn.	.....	Hamilton
Freeman, E. C., Pulaski		Giles	Berlin, Henry, 119 McCallie Ave., Chat- tanooga	.....	Hamilton
Grimes, G. C., Bodenham		Giles	Blackwell, O. L., Worley	.....	Hamilton
Harris, Jno. S., Minor Hill		Giles	Bogart, W. G., 518 Georgia Ave., Chat- tanooga	.....	Hamilton
Herbert, Robt. N., Aspen Hill		Giles	Bogart, W. M., Hill City, Tenn.	.....	Hamilton
Lancaster, A. J., Pisgah		Giles	Brooks, J. C., over Voight's Drug Store, Chattanooga	.....	Hamilton
Lancaster, Geo. W., Pisgah		Giles	Broyles, J. N., East Lake	.....	Hamilton
LaRue, Jas. A., Pulaski		Giles	Byrd, E. H., East Chattanooga	.....	Hamilton
Lowry, J. B., Smyrna		Giles	Calhoun, Jno. D., Guild	.....	Hamilton
May, J. P., Pres., Aspen Hill		Giles	Cleary, A. D., 602 Georgia Ave., Chat- tanooga	.....	Hamilton
Morris, John H., Jr., Bodenham		Giles	Colmore, R. M., 826 Market St., Chat- tanooga	.....	Hamilton
Neal, J. R., Wales Station		Giles	Cunningham, J. C., Hixson	.....	Hamilton
Sumpter, E. R., Pulaski		Giles	Davis, K. D., Weill Bldg., Chattanooga	.....	Hamilton
Woodard, B. H., Elkton		Giles			
Whitfield, Thomas, Veto, Ala.		Giles			
Akers, R. M., Nero, Ky.		Grainger			
Atkins, C. A., Powder Springs		Grainger			
Campbell, J. H., Rutledge		Grainger			
Idol, Willis, Leas Springs		Grainger			
Idol, E. T., Washburn		Grainger			
LeQuire, G. D., Rutledge		Grainger			
Livingston, G. W., Noeton		Grainger			
Neergaard, F. A., Rutledge		Grainger			
Pierce, J. W., Pres., Tate Springs		Grainger			
Tomlinson, O. R., Tate Springs		Grainger			
Wallace, R. M., Rutledge		Grainger			

Name	Address	County	Name	Address	County
Davis, M. D., Wiehl Bldg., Chattanooga	Hamilton	Spradling, L. W., 916 Carr St., Chattanooga	Hamilton		
Dietrich, W. A., Temple Court, Chattanooga	Hamilton	Stapp, Fred B., 9½ E. 8th St., Chattanooga	Hamilton		
Dye, J. S., 5 East 8th St., Chattanooga	Hamilton	Steele, Jno. B., James Bldg., Chattanooga	Hamilton		
Ehlen, Thos. N., Tyner	Hamilton	Steele, N. C., Loveman Bldg., Chattanooga	Hamilton		
Ellis, C. C., Central Block, Chattanooga	Hamilton	Stem, L. T., East Lake, Tenn.	Hamilton		
Ellis, G. M., 211 E. 8th St., Chattanooga	Hamilton	Sullivan, Bayard, 5 E. 9th St., Chattanooga	Hamilton		
Fancher, H. L., James Bldg., Chattanooga	Hamilton	Steele, N. C., Hamilton Nat'l Bank Bldg., Chattanooga	Hamilton		
Fowler, S. A., 1100 Whiteside St., Chattanooga	Hamilton	Steele, Willard, Hamilton Nat'l Bank Bldg., Chattanooga	Hamilton		
Gentry, J. A., Times Bldg., Chattanooga	Hamilton	Smith, Henry G., Care Essex Co. Hosp. for Insane, Cedar Grove, N. J.	Hamilton		
Gibbs, Vaulx, 831½ Market St., Chattanooga	Hamilton	Tatum, R. H., 826 Market St., Chattanooga	Hamilton		
Goodwin, J. L., 211 E. 8th St., Chattanooga	Hamilton	Taylor, J. H., Hamilton Nat'l Bank Bldg., Chattanooga	Hamilton		
Graham, C. G., Flatiron Bldg., Chattanooga	Hamilton	Travis, B. F., James Bldg., Chattanooga	Hamilton		
Green, Jas. E., 276½ E. Main St., Chattanooga	Hamilton	Wagner, M. M., "The Highlands," Chattanooga	Hamilton		
Gurney, Chas. H.	Rossville, Ga.	Wallace, Raymond, "The Elizabeth," Chattanooga	Hamilton		
Hale, B. C., Guild	Hamilton	Wert, B. S., 5 E. 8th St., Chattanooga	Hamilton		
Hanna, J. E., 500 E. 9th St., Chattanooga	Hamilton	West, Geo. R., 10 W. 8th St., Chattanooga	Hamilton		
Haskins, J. B., 211 E. 8th St., Chattanooga	Hamilton	Williams, G. V., 224½ E. Main St., Chattanooga	Hamilton		
Haywood, O. M., 16 McCallie Ave., Chattanooga	Hamilton	Williamson, L. C., East Lake	Hamilton		
Hill, A. F., Mt. Junction, Chattanooga	Hamilton	Wilson, H. B., James Bldg., Chattanooga	Hamilton		
Hogshead, J. M., 602 Georgia Ave., Chattanooga	Hamilton	Wise, E. B., over 739 Market St., Chattanooga	Hamilton		
Holtzelaw, C., 213 E. 8th St., Chattanooga	Hamilton	Wood, F. L., 224½ E. Main St., Chattanooga	Hamilton		
Hope, W. T., 101½ E. 8th St., Chattanooga	Hamilton	Woolford, J. S. B., "The Highland," Chattanooga	Hamilton		
Horton, J. W., James Bldg., Chattanooga	Hamilton	Woolner, A. B., Temple Court Bldg., Chattanooga	Hamilton		
Hughes, O. G., Ooltewah	Hamilton	Wylie, C. B., Bates Block, Chattanooga	Hamilton		
James, Thos. L., Orme	Hamilton	Yarnell, S. L., Loveman Bldg., Chattanooga	Hamilton		
Johnson, Jos. W., James Bldg., Chattanooga	Hamilton	Zeigler, T. J., East Chattanooga	Hamilton		
Johnson, E. C., 213 E. 8th St., Chattanooga	Hamilton	Clifton, Joe, Hickory Valley	Hardeman		
Larimore, H. P., Secy., Bates Block, Chattanooga	Hamilton	Curry, G. B., Toone	Hardeman		
Lee, R. W., 1101 Whiteside St., Chattanooga	Hamilton	Cocke, W. S., Hugo, Okla.	Hardeman		
Macquillan, J. W., over 600 Market St., Chattanooga	Hamilton	Dorris, H. E., Bolivar	Hardeman		
Martin, C. R., "The Highlands," Chattanooga	Hamilton	Goddard, W. L., Saulsbury	Hardeman		
McGhee, John B., 222½ E. Main St., Chattanooga	Hamilton	Milstead, H. W., Bolivar	Hardeman		
McMann, W. F., 826 Market St., Chattanooga	Hamilton	Neely, J. J., Bolivar	Hardeman		
Meacham, M. A., Loveman Bldg., Chattanooga	Hamilton	Stewart, Walter, Bolivar	Hardeman		
Morris, D. C., Chattanooga	Hamilton	Sassar, J. D., Sr., Pres., Middleton	Hardeman		
Newell, E. T., Walnut St., Chattanooga	Hamilton	Tate, Robt. W., Secy., Bolivar	Hardeman		
Newell, E. D., Walnut St., Chattanooga	Hamilton	Allen, Jno. T., Brownsville	Haywood		
Nefe, A. A., Lookout Mountain	Hamilton	Cooper, Thos. W., Brownsville	Haywood		
Null, H. O., Ridgedale	Hamilton	Dickson, A. C., Brownsville, R. F. D.	Haywood		
Partridge, Jas., Loveman Bldg., Chattanooga	Hamilton	Edwards, Jos. L., Secy., Brownsville	Haywood		
Rathmell, J. R., Hamilton Nat'l Bank Bldg., Chattanooga	Hamilton	Heard, F. C., Brownsville, R. F. D.	Haywood		
Reisman, E. E., 5 E. 8th St., Chattanooga	Hamilton	Norvelle, J. C., Brownsville	Haywood		
Richardson, R. M., 602 Georgia Ave., Chattanooga	Hamilton	Patton, J. S., Pres., Brownsville	Haywood		
Richmond, Jos. A., Harrison, Tenn.	Hamilton	Sorrell, A. H., Brownsville	Haywood		
Ryan, Geo. F., 426 Market St., Chattanooga	Hamilton	Sevier, A. H., Brownsville	Haywood		
Schumacker, L., Madison, Wis.	Hamilton	Stewart, W., Brownsville	Haywood		
Selden, J. M., Note Bank Bldg., Chattanooga	Hamilton	Summers, William, Brownsville, R. F. D.	Haywood		
		Warren, J. W., Forked Deer	Haywood		
		Whitelaw, W. H., Brownsville	Haywood		
		Wilkerson, J. B., Stanton	Haywood		
		Arnold, J. M., Lexington	Henderson		
		Bolen, C. E., Wildersville	Henderson		
		Boyd, M. P., R. F. D., Yuma	Henderson		
		Brandon, G. A., Lexington	Henderson		
		Hendricks, J. W., Lexington	Henderson		
		Huntsman, W. F., Secy., Lexington	Henderson		
		Johnston, C. H., Lexington	Henderson		

Name	Address	County	Name	Address	County
Keeton, J. T., Scott's Hill	Henderson		Catlett, W. A., 205-207 McTownlee Bldg., Knoxville	Knox	
Keeton, W. B., Scott's Hill	Henderson		Cochran, W. R., 721 Walnut St., Knoxville..	Knox	
Parker, S. T., Pres., Lexington	Henderson		Copenhaver, M. M., Lonsdale.....	Knox	
Waller, E. E., Juno	Henderson		Christenbery, H. E., Lonsdale.....	Knox	
Stinson, J. C., Center Point.....	Henderson		Culliman, John, Jr., W. Church Ave., Knoxville	Knox	
Watson, W. T., Lexington	Henderson		Depree, R. V., Medical College, Knoxville....	Knox	
Wyley, R. L., Scott's Hill	Henderson		Davis, Chas. Huff, Box 674, Knoxville.....	Knox	
Abernathy, G. T., Paris.....	Henry		Deaderick, Chalmers, 501 W. Church Ave., Knoxville.....	Knox	
Freeman, J. T., Big Sandy	Henry		DeArmond, C. C., South Knoxville.....	Knox	
Grainger, R. A., Paris.....	Henry		Frayser, B. H., 10 Fouché Bldg., Knoxville..	Knox	
McSwain, J. H., Secy., Paris.....	Henry		Fitzgerald, T. F., R. F. D. No 1, Knoxville	Knox	
McSwain, O. A., Paris.....	Henry		Gillen, Chas. A., Knoxville	Knox	
Paschal, A. F., Crossland, Ky.	Henry		Garrison, A. R., Byington	Knox	
Perry, R. J., Springville.....	Henry		Greer, W. A., Ledgewick Bldg., Knoxville....	Knox	
Rodgers, C. W., Pres., Como.....	Henry		Hill, O. W., Cherokee Bldg., Knoxville.....	Knox	
Batton, J. A., Coble.....	Hickman		Holloway, V. D., 609 Walnut St., Knoxville..	Knox	
Beasley, Jno. S., Centreville.....	Hickman		Howard, P. T., 131 Pruitt Place, Knoxville	Knox	
Beasley, R. P., Secy., Centreville.....	Hickman		Jones, E. L., Ledgewick Bldg., Knoxville....	Knox	
Cagle, W. D., Lobelville	Hickman		Jones, T. R., Walnut St., Knoxville.....	Knox	
Cooper, J. D., Sunrise.....	Hickman		Jones, C. B., Box 139, Knoxville.....	Knox	
Flowers, D. W., Little Lot.....	Hickman		Kelso, H. J., 425 W. Church Ave., Knoxville..	Knox	
Stephenson, C. V., Centreville.....	Hickman		Kabler, W. F., Bristol.....	Knox	
Webb, J. B., Goodrich.....	Hickman		Kennedy, J. M., N. Central, Knoxville.....	Knox	
Binkley, D. C. K., Hustburg.....	Humphreys		Kern, A. G., Box 405, Knoxville.....	Knox	
Clark, Frank, Haydensburg	Humphreys		Kincaid, J. H., 421 W. Church Ave., Knoxville	Knox	
Cooley, J. T., Waverly.....	Humphreys		Kyle, A. G., Deaderick Bldg., Knoxville.....	Knox	
Coke, F. H., Hustburg.....	Humphreys		Luttrell, Walter, 504 Asylum, Knoxville....	Knox	
Daniel, W. H., Secy., McEwen.....	Humphreys		Lones, C. E., McTownlee Bldg., Knoxville....	Knox	
Gould, H. F., Pres., Hustburg.....	Humphreys		Lynn, W. N., L. M. Hospital, Knoxville.....	Knox	
Horner, W. B., Plant.....	Humphreys		McCampbell, H. H., 614 Walnut St., Knoxville	Knox	
Slayden, W. W., Waverly.....	Humphreys		McCown, R. M., W. Church Ave., Knoxville..	Knox	
Smith, J. N., Cuba Landing.....	Humphreys		McNabb, C. P., 904 S. Gay St., Knoxville....	Knox	
Sugg, J. A., McEwen.....	Humphreys		McReynolds, R. L., Knoxville.....	Knox	
Teas, J. J., Waverly.....	Humphreys		Miller, J. E., Rogersville.....	Knox	
Clark, Frank, Haydensburg	Jackson		Miller, S. M., 209 W. Church Ave., Knoxville..	Knox	
Draper, Atha, R. R. 2, Gainesboro.....	Jackson		Miller, S. R., Box 743, Knoxville.....	Knox	
Hix, J. B., Flynn's Lick	Jackson		Nash, J. C., Lonsdale	Knox	
Lottis, H. P., Pres., Gainesboro.....	Jackson		Newman, W. S., 406 W. Church Ave., Knoxville	Knox	
Mabry, E. W., Secy., Gainesboro.....	Jackson		Oppenheimer, A. P., Knoxville	Knox	
McCoin, N. M., Gainesboro	Jackson		Peters, S. B., Knoxville	Knox	
Quarles, J. D., Whiteville.....	Jackson		Richmond, W. D., Empire Bldg., Knoxville..	Knox	
Reeves, C. E., Gainesboro	Jackson		Ristine, C. E., 713 Prince St., Knoxville....	Knox	
Anderson, J. C., Pres., Dandridge.....	Jefferson		Rule, A. L., Box 612, Knoxville.....	Knox	
Cline, B. E., Strawberry Plains.....	Jefferson		Rogers, K. E., Cherokee Bldg., Knoxville..	Knox	
Caldwell, J. M., Jefferson City.....	Jefferson		Rogers, J. W., Sevierville	Knox	
Cooper, W. S., White Pine.....	Jefferson		Sheddan, L. L., 419 W. Church Ave., Knoxville	Knox	
Dukes, N. M., Strawberry Plains.....	Jefferson		Sisk, J. A., Empire Bldg., Knoxville.....	Knox	
French, T. R., Dandridge.....	Jefferson		Swaney, O. M., Treadway.....	Knox	
Huggins, J. I., Secy., Dandridge	Jefferson		Tillery, J. P., 419 W. Church Ave., Knoxville	Knox	
King, W. F., Jefferson City.....	Jefferson		Vance, W. K., Bristol	Knox	
Roberts, W. E., Talbots.....	Jefferson		Wallace, W. L., N. Broadway, Knoxville....	Knox	
Tadlock, W. L., Talbots.....	Jefferson		West, J. Q. A., Arnstein Bldg., Knoxville....	Knox	
Tittsworth, B. M., Jefferson City.....	Jefferson		West, W. J., Empire Bldg., Knoxville.....	Knox	
Tinsley, P. A., Dandridge.....	Jefferson		White, W. H. L., Young Bldg., Knoxville....	Knox	
Tar, H. L., Jefferson City.....	Jefferson		Wilder, Dora Lee, R. F. D. No. 1., Knoxville..	Knox	
Walker, Jas. H., White Pine.....	Jefferson		Williams, D. H., 613 Walnut St., Knoxville	Knox	
Wagner, P. L., New Market.....	Jefferson		Young, B. F., Box 633, Knoxville.....	Knox	
Acuff, P. H., Care Knox Gen'l Hosp., Knoxville	Knox		Zemp, E. R., Box 349, Knoxville.....	Knox	
Acuff, S. D., 1314 Central Ave., Knoxville....	Knox		Adams, Jno. D., Bessie.....	Lake	
Atchley, W. P., Empire Bldg., Knoxville....	Knox		Alexander, W. S., Ridgely.....	Lake	
Armstrong, W. H., Rogersville.....	Knox		Alexander, J. D., Secy., Tiptonville.....	Lake	
Austin, W. S., Knoxville, Box 5521.....	Knox		Griffin, J. T., Tiptonville	Lake	
Alexander, Eben, Box 563, Knoxville.....	Knox		Griffin, R. B., Ridgely.....	Lake	
Booker, G. W., The Oxford, Knoxville.....	Knox		Griffin, R. W., Tiptonville.....	Lake	
Blankenship, J. P., W. Church Ave., Knoxville	Knox		Hellen, R. E., Ridgely.....	Lake	
Bosworth, B. D., Maryville	Knox				
Boyd, S. B., Box 115, Knoxville	Knox				
Bowen, Wm., Broad & Central, Knoxville....	Knox				
Bull, C. G., Medical College, Knoxville.....	Knox				
Campbell, Michael, Lyonsview, Knoxville....	Knox				
Carmichael, C. J., Walnut St., Knoxville....	Knox				
Carmichael, J. W., Walnut St., Knoxville....	Knox				
Casenburg, S. F., McTannen Bldg., Knoxville, Knox					
Cates, B. B., 508 W. Clinch Ave., Knoxville..	Knox				

Name	Address	County	Name	Address	County
Kelty, E. T.,	Cronansville.....	Lake	Smythe, Kelly,	Spring Creek.....	Madison
Smith, A. P.,	Ridgely.....	Lake	Troutt, J. M.,	Jackson.....	Madison
Wright, J. M.,	Pres., Tiptonville.....	Lake	Webb, L. L.,	Carroll.....	Madison
Chapman, S. T.,	R. F. D. 2, Halls.....	Lauderdale	Williamson, Leon,	Jackson.....	Madison
Glenn, S. M.,	Ripley.....	Lauderdale	Baxter, R. G.,	Caney Springs.....	Marshall
Hillsman, C. W.,	Henning.....	Lauderdale	Crunk, J. C.,	Iuna.....	Marshall
Kellner, T. B.,	Ripley.....	Lauderdale	Dickey, C. W.,	Cornersville.....	Marshall
Lackey, W. K.,	Ripley.....	Lauderdale	Dryden, D. M.,	Petersburg.....	Marshall
Lackey, J. B.,	Ripley.....	Lauderdale	Gault, F. H.,	Cornersville.....	Marshall
Lewis, J. R.,	Secy., Ripley.....	Lauderdale	Jones, Alf,	Cornersville.....	Marshall
Lusk, G. A.,	Ripley.....	Lauderdale	Hardison, C. C.,	Lewisburg.....	Marshall
Miller, W. D.,	Pres., Ripley.....	Lauderdale	Hardison, J. A.,	Pres., Lewisburg.....	Marshall
Miller, T. E.,	Ripley.....	Lauderdale	Hardison, S. T.,	Lewisburg.....	Marshall
Miller, Thos.,	Halls.....	Lauderdale	Logan, T. R.,	Lewisburg.....	Marshall
Massengill, A. P.,	Halls.....	Lauderdale	Moffitt, S. A.,	Mooreville.....	Marshall
Osteen, J. R.,	Ashport.....	Lauderdale	Ransom, W. C.,	Farmington.....	Marshall
Phillips, J. D.,	Gold Dust.....	Lauderdale	Reed, T. E.,	Secy., Lewisburg.....	Marshall
Porter, J. A.,	Ripley.....	Lauderdale	Vaden, W. E.,	Rich Creek.....	Marshall
Sandford, J. W.,	Ripley.....	Lauderdale	White, Buford,	Lewisburg.....	Marshall
Sandford, W. C.,	Henning.....	Lauderdale	White, Garreth,	Chapel Hill.....	Marshall
Scott, G. T.,	Curve.....	Lauderdale	Womack, C. W.,	Lewisburg.....	Marshall
Sharpe, S. B.,	Henning.....	Lauderdale	Anderson, H. O.,	Williamsport.....	Maury
Tucker, W. H.,	Halls.....	Lauderdale	Bundrant, W. C.,	St. Joseph.....	Maury
Walker, C. B.,	Ripley.....	Lauderdale	Beasley, M. A.,	Hampshire.....	Maury
Anderson, J. M.,	Fayetteville.....	Lincoln	Biddle, P. D.,	Columbia.....	Maury
Ashley, T. E.,	Fayetteville, R. F. D. No 1.....	Lincoln	Brown, T. B.,	R. F. D. 2, Columbia.....	Maury
Blair, E. K.,	Fayetteville.....	Lincoln	Church, R. M.,	Williamsport.....	Maury
Brock, B. B.,	Blanche.....	Lincoln	Collins, E. E.,	Columbia.....	Maury
Farrar, J. P.,	Fayetteville, R. F. D., No. S.....	Lincoln	Cook, M. M.,	Secy., Santa Fe.....	Maury
Cannon, W. F.,	R. F. D. 5, Fayetteville.....	Lincoln	Edwards, J. A.,	Columbia.....	Maury
Cullum, J. M.,	Fayetteville.....	Lincoln	Faucett, Dr. Paul H.,	Columbia.....	Maury
Forbes, E. C.,	Howell.....	Lincoln	Hardin, Jas. O.,	(Vet.) Spring Hill.....	Maury
Gilliam, L. H.,	Kelso.....	Lincoln	Hardison, T. J.,	Carters Creek.....	Maury
Goodrich, C. L.,	Fayetteville.....	Lincoln	Harrison, W. B.,	(Vet.), Columbia.....	Maury
Graham, J. T.,	Mulberry, R. F. D. No. 1.....	Lincoln	Haywood, J. L.,	Carters Creek.....	Maury
Holland, E. F.,	Mulberry.....	Lincoln	Horsley, A. S.,	Columbia.....	Maury
Joplin, W. S.,	Petersburg.....	Lincoln	Jones, Jas. H.,	Columbia.....	Maury
McRady, S. F.,	Petersburg.....	Lincoln	Kittrell, W. H.,	Mt. Pleasant.....	Maury
McWilliams, J. M.,	Fayetteville.....	Lincoln	Perry, R. S.,	Columbia.....	Maury
Noblett, B. E.,	Pres., Fayetteville.....	Lincoln	Orr, Eugene, R. F. D. 1,	Columbia.....	Maury
Patrick, T. A.,	Secy., Fayetteville.....	Lincoln	Pillow, Robert,	Columbia.....	Maury
Shelton, J. M.,	Kelso, R. F. D. No 1.....	Lincoln	Porter, O. J.,	Columbia.....	Maury
Sloan, J. E.,	Harms, R. F. D. No 1.....	Lincoln	Ragsdale, L. E.,	Williamsport.....	Maury
Summers, W. P.,	Harms, R. F. D. No 1.....	Lincoln	Thomas, H. E.,	Pres., Columbia.....	Maury
Wyatt, J. M.,	Fayetteville.....	Lincoln	Timmons, E. A.,	Columbia.....	Maury
Yearwood, A. L.,	Fayetteville.....	Lincoln	Walker, M. W.,	Santa Fe.....	Maury
Burditt, G. M.,	Lenoir City.....	Loudon	Webb, W. R.,	Hampshire.....	Maury
Eblin, J. G.,	Lenoir City.....	Loudon	Wilkes, J. H.,	(Vet.), Columbia.....	Maury
Fout, W. T.,	Lenoir City.....	Loudon	Wilkes, J. W.,	Columbia.....	Maury
Harrison, J. J.,	Loudon.....	Loudon	Williamson, J. G.,	Jr., Columbia.....	Maury
Hickman, T. J.,	Secy., Lenoir City.....	Loudon	Williamson, J. G.,	Sr., Columbia.....	Maury
Leiper, J. T.,	Pres., Lenoir City.....	Loudon	Abel, W. J.,	Decaturville.....	McMinn
Pagett, W. D.,	Lenoir City.....	Loudon	Basinger, Jno. L.,	Riceville.....	McMinn
Arnold, Jno.,	M., Jackson.....	Madison	Brendle, D. P.,	Englewood.....	McMinn
Blackmon, Jno.,	A., Jackson.....	Madison	Buttrau, W. H.,	Niota.....	McMinn
Crook, J. L.,	Jackson.....	Madison	Copenhaver, L. A.,	Englewood.....	McMinn
Crook, J. A.,	Jackson.....	Madison	Center, H. E.,	Etowah.....	McMinn
Duckworth, W. C.,	Jackson.....	Madison	Creech, Richard,	Englewood.....	McMinn
Drake, C. C.,	Jackson.....	Madison	Foree, J. O.,	Athens.....	McMinn
Dancy, A. B.,	Jackson.....	Madison	Froneybarger, W. R.,	Pendergrast.....	McMinn
Gresham, J. W.,	Jackson.....	Madison	Kittrell, S. S.,	Englewood.....	McMinn
Greer, R. L.,	Norwood.....	Madison	Moore, W. S.,	Secy., Athens.....	McMinn
Hawkins, Herman,	Secy., Jackson.....	Madison	Nichols, Jno. O.,	Etowah.....	McMinn
Hopper, J. D.,	Pres., Jackson.....	Madison	Nankivell, Jas. R.,	Pres., Athens.....	McMinn
Hamilton, F. B.,	Jackson.....	Madison	Proudfoot, Jas. L.,	Athens.....	McMinn
Henderson, S. A.,	Jackson.....	Madison	Staunton, G. W.,	Athens.....	McMinn
Herron, J. T.,	Jackson.....	Madison	Shipley, Gus,	Athens.....	McMinn
Jones, Jas. T.,	Jackson.....	Madison	Taylor, Henry F.,	Calhoun.....	McMinn
Jones, H. L.,	Jackson.....	Madison	Vinsant, Chas. C.,	Etowah.....	McMinn
Lusk, P. B.,	Jackson.....	Madison	Bell, W. T.,	Selmer.....	McNairy
Lockman, W. L.,	Medon.....	Madison	Boatman, J. A.,	Bethel Springs, R. R.....	McNairy
McCoy, Ambrose,	Jackson.....	Madison	No. 1.....	McNairy	
O'Connor, F. J.,	Jackson.....	Madison	Dodds, B. C.,	Secy., Gravelhill.....	McNairy
Raines, Jas. T.,	Malesus.....	Madison	Hodges, W. H.,	Finger.....	McNairy
Raines, Jessie,	Malesus.....	Madison	King, J. M.,	Ramer.....	McNairy
Rochelle, W. F.,	Jackson.....	Madison	Key, M. C.,	Ramer.....	McNairy

Name	Address	County	Name	Address	County
Smith, J. L., Selmer.....	McNairy	Geisler, Francis Oto, Secy., Isabella.....	Polk		
Smith, J. R., Selmer.....	McNairy	Gilliam, William Young, Copperhill.....	Polk		
Sanders, E. G., Stantonville.....	McNairy	Iyder, Robert Lee, Isabella.....	Polk		
Sanders, H. C., Pres., Selmer, R. R. No 1.....	McNairy	Kinsey, Fred M., Ducktown.....	Polk		
Wallace, W. W., Selmer.....	McNairy	Kinsey, Lucius E., Ducktown.....	Polk		
Barnes, L. L., Vonore.....	Monroe	Lewis, Albert W., Pres., Copperhill.....	Polk		
Brock, R. A., Pres., Sweetwater.....	Monroe	Adams, J. O., Pres., Monterey.....	Putnam		
Bagwell, B. W., Madisonville.....	Monroe	Curtis, H. C., Algood.....	Putnam		
Davis, J. E., Secy., Sweetwater.....	Monroe	Denton, Samuel, Buffalo Valley.....	Putnam		
Hardin, J. H., Sweetwater.....	Monroe	Dyer, Lex, Secy., Cookeville.....	Putnam		
McClain, W. A., Sweetwater.....	Monroe	Ensor, L. D. J., Cookeville.....	Putnam		
McCollum, J. A., Tariffville.....	Monroe	Farner, W. S., Cookeville.....	Putnam		
Penland, S. N., Madisonville.....	Monroe	Howard, W. A., Algood.....	Putnam		
Roberts, T. M., Sweetwater.....	Monroe	Moore, J. T., Algood.....	Putnam		
Shearer, H. C., Madisonville.....	Monroe	Storris, J. R., Cookeville.....	Putnam		
Acree, F. M., Dover, Tenn.....	Montgomery	Trapp, J. S., Sparta.....	Putnam		
Brandau, Jno. W., Clarksville.....	Montgomery	Ray, R. L., Monterey.....	Putnam		
Ezell, J. J., Clarksville.....	Montgomery	Chadwick, P. C., Rhea Springs.....	Rhea		
Ferguson, R. T., R. F. D. 4, Clarksville.....	Montgomery	Clack, J. M., Spring City.....	Rhea		
Frey, J. H., Clarksville.....	Montgomery	Donaldson, Sam, Dayton.....	Rhea		
Hughes, M. L., Clarksville.....	Montgomery	Gillespie, J. R., Dayton.....	Rhea		
Hunt, I. E., New Providence.....	Montgomery	Gross, A. W., Dayton.....	Rhea		
Macon, R. B., Clarksville.....	Montgomery	Hammock, J. W., Graysville.....	Rhea		
Marable, T. H., Clarksville.....	Montgomery	Lovell, A. L., Graysville.....	Rhea		
Morrison, J. C., Clarksville.....	Montgomery	McDonald, W. P., Spring City.....	Rhea		
McFall, R. J., Erin.....	Montgomery	McKenzie, Jas. L., Pres., Graysville.....	Rhea		
Neblett, L. L., Stayton.....	Montgomery	Miller, R. C., Secy., Evensville.....	Rhea		
Neblett, S. E., Southside.....	Montgomery	Thomison, J. G., Dayton.....	Rhea		
Nesbitt, H. A., Cunningham.....	Montgomery	Thomison, W. F., Dayton.....	Rhea		
Runyon, R. J., Pres., Clarksville.....	Montgomery	Watkins, R. K., Spring City.....	Rhea		
Slayden, J. D., Clarksville.....	Montgomery	Yancey, Sam M., Dayton, R. F. D. No. 4.....	Rhea		
Vaughan, G. E., Clarksville.....	Montgomery	Clack, J. M., Rockwood.....	Roane		
Webb, L. E., St. Bethlehem.....	Montgomery	Clack, W. S., Rockwood.....	Roane		
Webb, Roy, Secy., St. Bethlehem.....	Montgomery	Givan, G. C. G., Secy., Harriman.....	Roane		
Bird, A., Wartburg.....	Morgan	Goodwyn, J. B., Harriman.....	Roane		
Jones, S. H., Secy., Sunbright.....	Morgan	Hill, W. W., Harriman.....	Roane		
Todd, G. R., Wartburg.....	Morgan	Nelson, J. E., Rockwood.....	Roane		
Waltie, A. S., Pres., Lancing.....	Morgan	Philips, E. S., Rockwood.....	Roane		
Blanton, M. A., Union City.....	Obion	Roberts, John, Kingston.....	Roane		
Butler, H. T., Union City.....	Obion	Sewell, J. A., Rockwood.....	Roane		
Capps, J. M., Kenton.....	Obion	Waller, J. J., Oliver Springs.....	Roane		
Carlton, J. D., Union City.....	Obion	Wilson, J. C., Rockwood.....	Roane		
Chandler, S. E., Minnick.....	Obion	Williams, W. B., Harriman.....	Roane		
Cunningham, J. P., Elbridge.....	Obion	Zirkle, G. P., Kingston.....	Roane		
Darnall, J. F., Pres., Obion.....	Obion	Brown, T. L. B., White House, R. R. No. 1.....	Robertson		
Glover, H., Troy.....	Obion	Covington, Jas. J., Cross Plains.....	Robertson		
Havner, J. B., Troy.....	Obion	Connell, Jas. R., Adams.....	Robertson		
Howard, J. A., McConnell.....	Obion	Davis, D. E., Springfield.....	Robertson		
Jernigan, V. J., Obion.....	Obion	Fyke, Benjamin F., Secy., Springfield.....	Robertson		
Maddox, D. C., Terrell.....	Obion	Frey, J. J., Springfield, R. R. No. 6.....	Robertson		
Marshall, T. E., Union City.....	Obion	Gossett, W. I., Portland, R. R. 1.....	Robertson		
Matlock, P. N., Mason Hall.....	Obion	Green, Jno, R., Springfield.....	Robertson		
Paschal, J. B., Fulton, Ky.....	Obion	House, Thos. B., Springfield.....	Robertson		
Pearce, D. M., Union City.....	Obion	Jones, Guy R., Orlinda.....	Robertson		
Prather, D. J., Secy., Union City.....	Obion	Johnson, Turner L., Greenbrier.....	Robertson		
Prather, P. W., Woodlawn Mills.....	Obion	Mathews, Richard L., Springfield.....	Robertson		
Roberts, W. F., Troy.....	Obion	Moore, Jerome, E., (Honorary), Springfield.....	Robertson		
Roper, J. F., Union City.....	Obion	Porter, William W., Springfield.....	Robertson		
Sharp, J. B., Obion.....	Obion	Reeves, Jno. H., Springfield, R. R. No. 1, Robertson.....	Robertson		
Watson, F. W., Union City.....	Obion	Ramer, D. W., Springfield, R. R. No. 3.....	Robertson		
Wells, J. J., Glass.....	Obion	Royster, William, Cedar Hill, R. R.....	Robertson		
White, E. H., Rives.....	Obion	No. 5.....	Robertson		
Wright, J. L., Elbridge.....	Obion	Sory, Bailey B., Cedar Hill.....	Robertson		
Bertram, J. F., Manson.....	Obion	Sory, Leander F., Adams.....	Robertson		
Breeding, W. M., Livingston.....	Overton	Scott, Miles, Pres., Springfield, R. R.....	Robertson		
Capps, M. B., Livingston.....	Overton	No. 9.....	Robertson		
Lansden, J. B., Livingston.....	Overton	Woodruff, Jas. B., Orlinda.....	Robertson		
McDonald, J. T., Monroe.....	Overton	Walton, L. B., (Honorary), White House, R. R. No. 1.....	Robertson		
Qualls, A. B., Secy., Livingston.....	Overton	Woodard, F. M., Springfield.....	Robertson		
Reed, W. A., Livingston.....	Overton	Winters, W. W., Greenbrier.....	Robertson		
Smith, J. E., Pres., Hilham.....	Overton	Bilbro, W. C., Murfreesboro.....	Rutherford		
Wells, M. H., Hilham.....	Overton	Campbell, V. S., Murfreesboro.....	Rutherford		
Akin, Elias Marion, Copperhill.....	Polk				
Barnes, James Jackson, Copperhill.....	Polk				
Copeland, W. J., Fetzerton.....	Polk				

Name	Address	County
Chadwick, W. E., Murfreesboro		Rutherford
Crosthwait, Geo. W., Florence		Rutherford
Duggan, S. B., Eagleville		Rutherford
Duggan, S. S., Eagleville		Rutherford
Engles, W. J., Smyrna		Rutherford
Grigg, S. C., Murfreesboro		Rutherford
Huff, D. C., Christiana		Rutherford
Jones, Enoch H., Murfreesboro		Rutherford
Kelton, J. C., Lascassas		Rutherford
Murfree, Jas. B., Murfreesboro		Rutherford
Murfree, M. B., Murfreesboro		Rutherford
Overall, Jas. C., Lascassas		Rutherford
Pitts, Rufus, Murfreesboro		Rutherford
Read, R. W., Murfreesboro		Rutherford
Rees, H. C., Murfreesboro		Rutherford
Rucker, Jas. J., Murfreesboro		Rutherford
Smita, S. B., Overall		Rutherford
White, B. N., Murfreesboro		Rutherford
Youree, Wm. E., Readyville		Rutherford
Boyatt, F. M., Oneida		Scott
Foster, J. I., Huntsville		Scott
Phillips, T. L., Pres., Newland		Scott
McGill, T. M., Norma		Scott
Shields, J. A. P., Secy., Norma		Scott
Thompson, M. E., Laxton		Scott
Ayers, J. C., 2158 Union Ave., Memphis		Shelby
Andrews, J. L., Rogers Bldg., Memphis		Shelby
Anderson, P. H., Tenn. Trust Bldg., Memphis		Shelby
Anderson, W. S., Memphis Trust Bldg., Memphis		Shelby
Branch, B. L., Collierville		Shelby
Blackburn, E. C., Randolph Bldg., Memphis		Shelby
Berry, H. L., Randolph Bldg., Memphis		Shelby
Beaty, H. W., Station C., Memphis		Shelby
Bridger, Jas. D., Memphis Trust Bldg., Memphis		Shelby
Beauchamp, Jesse L., 614 N. 7th St., Memphis		Shelby
Barton, Jas. L., 78 S. Main St., Memphis		Shelby
Biggs, J. M., Memphis Trust Bldg., Memphis		Shelby
Brinson, S. N., 201 Cooper Ave., Memphis		Shelby
Burns, W. B., Porter Bldg., Memphis		Shelby
Black, W. T., Randolph Bldg., Memphis		Shelby
Braun, Wm. T., 814 Exchange Bldg., Memphis		Shelby
Bearden, M. L., 1091 Greenwood, Memphis		Shelby
Baldwin, W. H., Station G, Memphis		Shelby
Bell, Jno. C., 534 N. 2nd., Memphis		Shelby
Buford, G. C., Randolph Bldg., Memphis		Shelby
Beck, C. M., Coahoma, Miss.		Shelby
Bell, C. A., Lee Bldg., Memphis		Shelby
Collier, Casa, Tenn. Trust Bldg., Memphis		Shelby
Chaffee, F. R., Lucy		Shelby
Crisler, J. A., Peabody Hotel, Memphis		Shelby
Carter, J. Hugh, Tenn. Trust Bldg., Memphis		Shelby
Cullings, Jesse J., 83 W. Jackson Bldg., Memphis		Shelby
Crutcher, J. R., 1411 Madison Ave., Memphis		Shelby
Crofford, T. J., 211 N. 3rd St., Memphis		Shelby
Campbell, W. C., Randolph Bldg., Memphis		Shelby
Clary, W. F., Memphis Trust Bldg., Memphis		Shelby
Castles, W. A. S., 631-2 N. Main St., Memphis		Shelby
Campbell, S. S., 729 Monroe St., Memphis		Shelby
Clark, J. C., Goodwyn Inst., Memphis		Shelby
Cochran, J. F., 579 5th St., Memphis		Shelby
Cunningham, J. W., Randolph Bldg., Memphis		Shelby
Currie, J. A., Lee Bldg., Memphis		Shelby
Dickson, Harry, Memphis		Shelby

Name	Address	County
Dunavant, B. N., Secy., Exchange Bldg., Memphis		Shelby
Duvall, C. E., 218 McLemore St., Memphis		Shelby
Duncan, I. G., 422 N. Waldran, Memphis		Shelby
DeLoach, A. B., Scimitar Bldg., Memphis		Shelby
Ellett, C. E., Randolph Bldg., Memphis		Shelby
Everett, H. B., Station C., Memphis		Shelby
Edwards, C. W., 488 Laclede Ave., Memphis		Shelby
Erskine, Alexander (Vet.), Randolph Bldg., Memphis		Shelby
Fontaine, Bryce W., Central Bank Bldg., Memphis		Shelby
Francis, E. E., 115 N. Main, Memphis		Shelby
Farris, H. L., Frisco Hosp., St. Louis, Mo.		Shelby
French, J. E., Silver City, Miss.		Shelby
Flippin, S. J., Brunswick		Shelby
Fagin, Robt., Exchange Bldg., Memphis		Shelby
Fleumer, O. C., Goodbar Bldg., Memphis		Shelby
Farrington, S. M., Memphis Trust Bldg., Memphis		Shelby
Frost, I. N., Station C., Memphis		Shelby
Graham, Frank, Memphis Trust Bldg., Memphis		Shelby
Gray, Jas. N., Arlington		Shelby
Goltman, M., Memphis Trust Bldg., Memphis		Shelby
Hudson, A. G., Raines		Shelby
Henning, B. G., Memphis Trust Bldg., Memphis		Shelby
Ham, E. C., Randolph Bldg., Memphis		Shelby
Haskell, L. W., Memphis		Shelby
Havell, W. T., Brunswick		Shelby
Haynes, E. E., Randolph Bldg., Memphis		Shelby
Hoover, F. B., Goodwyn Inst., Memphis		Shelby
Henning, Max, Memphis Trust Bldg., Memphis		Shelby
Haase, M., Memphis Trust Bldg., Memphis		Shelby
Hall, D. M., Memphis Trust Bldg., Memphis		Shelby
Henderson, R. G., Randolph Bldg., Memphis		Shelby
Holder, E. M., Memphis Trust Bldg., Memphis		Shelby
Hill, J. F., Exchange Bldg., Memphis		Shelby
Holmes, J. B., 1686 Euclid Ave., Memphis		Shelby
Jacobs, A. G., Scimitar Bldg., Memphis		Shelby
Jones, F. A., Tenn. Trust Bldg., Memphis		Shelby
Jones, Heber, Exchange Bldg., Memphis		Shelby
Jelks, Jno. L., Tenn. Trust Bldg., Memphis		Shelby
Johnson, J. E., Memphis Trust Bldg., Memphis		Shelby
Jones, Kennedy, Tenn. Trust Bldg., Memphis		Shelby
Jones, Geo. P., 218 McLemore St., Memphis		Shelby
Kane, Elizabeth C., Exchange Bldg., Memphis		Shelby
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SYMPTOMLESS GONORRHEA IN WOMEN*

BY H. L. FANCHER, M.D.,
Chattanooga, Tenn.

Gonorrheal infection is found in the genito-urinary organs of the female far more frequently than all other infections combined.

It is the cause of most sterilities, most extra-uterine pregnancies and unavoidable abortions, the greater number of pelvic inflammations, including pus-tubes and ovarian abscesses, and practically all cases of ophthalmia neonatorum.

Practically all of the inmates of bawdy houses and most of the libidinous women of the streets, those who frequent the assignation houses and the so-called "private pieces," constantly carry the infection.

A great many innocent married women become infected by their devoted husbands, who, in later life, complain because their wives have always been in bad health and finally had to go to the hospital.

The life history of the gonococcus and its pathogenesis is peculiar to itself. It never works on the surface of any form of epithelium, but burrows into the sub-mucous tissue and works its way, by the help of its fellow, along in this tissue similar to the way in which the garden mole works its way under the sod.

It rarely invades the deeper tissues, and

seldom seeks the blood and lymph channels to further its progress. Its mode of warfare seems offensive rather than defensive, attacking his enemy, the phagocyte, when and where they meet, entering directly into its protoplasm, and there fights till dead or victorious.

Gonorrhea in women, and especially in the cervical region, begins in a chronic or sub-acute form more often than in an acute form. The reasons are obvious. It must gain access to the sub-mucous tissue before it produces symptoms; its progress is slow because it does not readily enter the blood and lymph channels; the cervical region is poorly supplied with lymphatics, and its nerve supply is so poor that pain is rarely felt, even when it is violently inflamed.

Why do nine-tenths of the male population have gonorrhea by the time they are twenty-five years of age? Because the women with whom they have intercourse have gonorrhea almost constantly. Why is gonorrhea so prevalent among the women of the under world? The main reason is because they rarely take treatment. The question naturally arises, why do they not take treatment? It is because the primary infection is most often located at the external os; they suffer no inconvenience and have comparatively no symptoms.

It is this symptomless gonorrhea in the female to which I wish to briefly call your attention.

Bandler compiles a few statistics taken from the reports of Sciller, Bumm, Finner

* Read before Chattanooga Academy of Medicine, April 11, 1911.

and others, which are worth noting in the consideration of this subject.

Out of twenty-one (21) public women whose cervical secretions showed gonococci, only four (4) had clinical symptoms of cervical catarrh. The other seventeen (17), from a clinical standpoint, could be considered normal.

Out of one hundred and twelve (112) urethras examined showing gonococci by the microscope, ninety-one (91) had no abnormal secretions, and sixty-one (61) of this number had absolutely no clinical symptoms of urethritis.

The relative frequency of gonorrhea as regards location is given as follows:

In two hundred and thirty-five (235) cases of chronic gonorrhea, the urethra was affected in one hundred and eighty-one (181), the cervix in two hundred and sixteen (216), and the adnexa in one hundred and thirty-nine (139).

In one hundred (100) women who had been infected for at least five (5) months, gonococci were found in the urethra forty-three (43) times and in the cervix ninety-four (94) times. Twenty-five (25) per cent had involvement of the endometrium and ten (10) per cent had tubal infection.

Most text-books state that the urethra is the primary site of infection much more frequently than the cervix. This has not been verified by me in private practice, neither do the above statistics justify such a statement.

Gonorrheal infection does not often invade the vagina. Its tough, thick, squamous epithelium, together with its peculiar individual characteristics, presents quite a mechanical barrier to microbic invasion. It is also protected by the acid-producing bacterium of Doederlein which is present in every normal vagina.

So many of our male patients, when told that they have gonorrhea, relate the old, old story—that the girl is a “private piece” of his, and that she swears there is nothing the matter with her. Both are probably honestly mistaken—she in believing there is nothing the matter with her because she

has no symptoms, and he in believing that the little girl is *his* “private piece” because he is unsophisticated—a thing he will rarely acknowledge.

If gonorrhea in the female always presented the classical symptoms that it does in the male, we would have more cases to treat. In many instances a woman will get the infection and carry it for years without suffering any inconvenience or even knowing that she has it.

If the physician waits for subjective symptoms, he will fail to diagnose fully three-fourths of his cases of gonorrhea; and if he utilizes both subjective and objective symptoms without the aid of the microscope, he will let many cases slip by without recognition.

If a woman presents herself for treatment complaining of painful and frequent micturition, with a muco-purulent discharge from the vagina, pelvic pain and an elevation of temperature, and on examination we find an inflamed urethra, vulva or vagina, with a yellow or greenish discharge, we are pretty safe in making a diagnosis of acute gonorrhea.

If she comes to us with the “whites,” with a history of having had some of the above-named symptoms previously, and on examination we find a granular urethra, with a slight, milky secretion, or red and slightly inflamed vulvo-vaginal glands, from which we can press a drop of pus; or if we find an eroded cervix, with a yellow or greenish discharge from its canal and possibly a few warty growths around the vulvo-vaginal orifice, we may be pretty safe in diagnosing her condition as chronic gonorrhea.

But for that great army of gonorrheic women who have no subjective symptoms the diagnosis is not so easily made, and the microscope is our chief reliance. In such cases we usually find on examination an eroded cervix, with a slight mucous or muco-purulent discharge from the cervical canal. A smear made from this discharge will usually reveal gonococci if they are present in any great quantity. If there is

no cervical erosion, but a mild mucopurulent discharge from the cervix, mop out the canal and get a smear from the fresh secretion. If no gonococci are found, thoroughly cleanse the vagina and place over the mouth of the cervix a loosely folded gauze tampon; remove in twenty-four hours and examine the collected discharges. Another means of getting discharges from high up in the cervical canal is by means of a suction tube applied to the cervix—either a large glass tube fitting over the cervix, or a small glass tube fitted into the cervical canal, to the other end of which is attached a rubber bulb or a suction pump. If the discharge is collected immediately after menstruation, the gonococci are more easily found.

There is one thing to be remembered in regard to microscopic examinations in general, and especially when one is examining for gonococci. A positive finding is a positive diagnosis, but a negative finding is not necessarily a negative diagnosis.

The prognosis in these cases should be guarded, for it is really more difficult to determine when chronic gonorrhea is cured in the female than it is in the male.

It was not my object to discuss the treatment of gonorrhea in this paper. I simply wished to call attention to the prevalence of "symptomless gonorrhea in the female" and insist on a more thorough means of diagnosing it.

The slogan of the present is preventive medicine and prophylaxis. This applied to gonorrhea means education of the masses and strict regulation of bawdy houses, to which I will pay my respects at some future time.

TREATMENT OF CONGENITAL CLUB-FOOT IN INFANTS.*

By R. W. BILLINGTON, M.D.,

Lecturer on Orthopedic Surgery, Vanderbilt Medical Department, Nashville.

Congenital talipes equinovarus, particularly in the first two years of life, is an

eminently curable deformity. It is a fact, however, that it would be difficult to find any condition in surgery with such a record of failures and relapses, and, I may add, of unnecessary and positively harmful operations. Then what are the reasons for this sad commentary, and that, too, in a period of brilliant surgical achievements? Some of the failures are the result of lack of co-operation on the part of parents; a negligible number are due to unusual obstacles in the deformity itself; but the vast majority are due to the failure of the surgeon to understand the true nature of the deformity, or to his unwillingness to give the necessary, careful attention to details during a somewhat prolonged, active treatment, and to the supervision of these cases long after cure is supposed to be complete.

There is, therefore, a widespread misconception among the laity as to the necessary duration of treatment and supervision which has no doubt contributed very largely to the frequent relapses and to the consequent discredit to surgery. So, before beginning treatment, it is necessary to strongly impress upon the mother and father what the treatment of this deformity means, pointing out to them the necessity of a prolonged treatment if a permanent and perfect cure is to be obtained, and assuring them that persistence is certain to succeed.

Before taking up the treatment proper, I desire to call attention to a few facts in regard to etiology and pathology. I will state here that I shall deal only with talipes equinovarus, the form of talipes to which the term club-foot is now usually applied. Much has been written about the cause of this deformity, but, after all has been said, there is only one theory that is tenable in the vast majority of cases—that is, mechanical influences during fetal life. Equinovarus is the normal attitude during the early and middle periods of intrauterine life. Therefore abnormal constraint or pressure in this position exaggerates it and produces this most frequent variety of talipes. Deficiency of the amniotic fluid is notably frequent in connection with the deformity.

* Read before Nashville Academy of Medicine, December, 1911.

Most authorities attach little importance to heredity. I recently saw three club-footed children born of the same mother, but is it not reasonable to believe that similar mechanical influences are likely to be found during succeeding pregnancies? We know, as expressed in Wolff's law, that a continual change of posture or function, or both, will produce definite changes in the external contour as well as in the internal structure of bone. Therefore we need look no further for causes such as trophic, hereditary and other providential influences about which we know so little. By mechanically reversing this posture and function we apply Wolff's Law to correct the deformity; and if we apply it properly and persist as the deforming influences persisted, we can obtain a practically perfect result. There are a few cases classed as club-foot that are due to arrest of development or to some fault of the germ, but these are rare and are not of the typical type under consideration.

There is no paralysis in these cases, though there is weakness of the peroneal and extensor muscles, due to the continuous stretching. This position relaxes the sural and adductor tendons, and contracture of these muscles is the natural result. This position likewise gives the latter muscles an advantage in leverage which will continue to increase the unbalanced power between the opposing leg muscles. If the cases are neglected there is more or less atrophy of all the leg muscles, due to the loss of the normal function of the foot. This is scarcely noticeable in young babies, and practically normal leg muscles are the result in cases properly treated during infancy.

The faulty anatomy of the structures of the foot, then, is what we should naturally expect from pressure and unbalanced muscle power acting continuously in one direction. The large part of the body of the astragalus lies anterior to its articulation with the tibia, and its neck is turned downward and inward. The os calcis is turned downward; the inner tuberosity turns up-

ward toward the inner malleolus, and its anterior articular surface looks downward and inward in the same plane as the articular surface of the head of the astragalus. The scaphoid is displaced inward and articulates with the deflected head of the astragalus, even touching the inner malleolus in extreme deformities. The cuboid is likewise displaced inward and downward. The cuneiform, metatarsal and phalangeal are only slightly changed in outline, but their direction is, of course, inward and downward. In mild cases of so-called pigeon toes there may be only an inward deflection of the bones anterior to the tarsometatarsal joints. The position of the bones in club-foot causes a contracture of the internal and plantar ligaments and fascia, with consequent elongation of the external and dorsal ligaments. This condition of muscles, ligaments and fascia is exactly analogous to that found in acquired flat-foot—a fact which also applies in the treatment, which I shall presently outline.

The management of infantile talipes which I shall present briefly is that which is now practiced by our best orthopedists, who differ only in the minor details of treatment. And my reasons for presenting the subject here are that there is still a tendency among general surgeons to employ and rely upon tenotomies and faciaotomies to cure the deformity, carrying out little or no after treatment, except, probably, the application of an ineffective brace.

If we consider the complexity of the condition in hand, with its numerous altered structures, it is no wonder that attempts by such methods so often fail. A tenotomy can be no more than an incident in the restoration of such a composite mass of ill-shaped structures to the normal. We should apply a gradual corrective force against the malformed structures and the opposing influences, taking advantage of the overdeveloped ligaments and fascia on the inner and plantar surfaces, and of the shortened tendons on the inner and posterior aspects of the foot, using these as a fulcrum by means of which to apply the pressure

which will change the contour of the bones involved back to the normal. Thus we also effect a stretching of the shortened structures and relax the lengthened ones, allowing the latter to contract and regain their normal strength and tone. In cutting or rupturing the shortened tendons we lose their valuable aid as a corrective force, thus making it impossible to obtain an anatomically and functionally perfect foot. Such operations are not necessary in infants, and even in older children gradual correction alone will usually be effective, but this is often too tedious at this age, on account of the more resistant structures, to be advisable except in mild cases.

Treatment should begin as soon as possible after the age of two or three weeks, and is divided into three stages: 1. Correction of the external deformity. 2. Support of the foot in the over-corrected posture until the transformation of its internal structure is complete and until muscular balance has been regained. 3. Supervision after the patient begins to walk, directing proper functional use of the foot and correcting any possible tendency toward recurrence.

The first stage is best accomplished by the use of plaster of Paris bandages. Anyone who has had his first case will appreciate the many unsuspected difficulties in applying an efficient and satisfactory plaster bandage to a three-weeks-old foot. These difficulties, however, can be overcome by proper experience, and, as Whitman says, the disadvantages of the treatments are due almost entirely to their improper application. Care must be taken to avoid pressure sores, dermatitis, interference with the circulation, and slipping and rotation of the bandage. The last difficulty may be overcome by a strip of adhesive plaster attached to the leg at a suitable angle, and having its free end incorporated in the cast. Thin cotton sheet wadding should be placed between the toes, around the metatarsal phalangeal joints, over the outer aspect of the ankle, and around the leg just below the knee, which latter may

be turned back over the upper edge of the cast as it is nearly finished and held by another layer or two of the bandage, thus making a border that will not cut around the knee. After applying the cotton the foot is pressed gently down and outward, correcting the *varus* feature of the deformity as far as possible without causing pain. A Canton flannel bandage is smoothly but loosely applied from the toes to the knee, being two layers thick over the points of pressure and one layer elsewhere. The plaster bandage two and one-half inches wide is then applied snugly and smoothly from the tips of the toes to the knee. Rub well as each layer is applied and you will get a light cast that is strong and fits perfectly. A single bandage four or five yards long is sufficient for the cast in children under four to six months old. Only slight correction, if any, should be made after the plaster is applied, as this will produce wrinkles on its inner surface that may cause pressure. For the same reason care must be taken not to grasp the cast before it hardens with thumbs or fingers, producing dents. The foot should be held with the flat surface of the hand. The tips of the toes should be left exposed and watched for a while for possible evidence of obstructed circulation.

This bandage is removed once a week and reapplied after cleaning and powdering the skin and increasing the amount of correction to a point short of discomfort. The resisting structures will be found relaxed at each removal, and very little force will be necessary to get a decided improvement in posture. After the *varus* is decidedly over-corrected, one should then begin to correct the *equinus*. This sequence is necessary, as the leverage is thus best obtained. It would be very difficult to maintain abduction of the foot if held at right angles to the leg.

A decided over-correction is accomplished usually in from six to twelve weeks, depending upon the degree of the deformity in the beginning, and upon the age of the patient. After a position of extreme

calcaneovalgus has been obtained, the foot should be held by the plaster bandage in this position for several weeks, reapplying it now only about every three weeks. After this stage is completed there will be no restriction of the normal movements of the foot. In fact, we should have a foot with bones that have been practically re-formed in shape and structure, with normally adjusted articulations and articular facets, with ligaments and fascia accommodating themselves to the new bony relations, and with muscles that need only slight assistance to fully regain their normal balance of tone and power.

During the second stage the object of treatment is to support the foot in a decidedly over-corrected position until the slack of the lengthened tissues is completely taken up, and until the above-mentioned changes in bones and muscles are completed. The use of systematic massage and manipulation are also essential features here. Support is accomplished in several ways, depending somewhat upon the case, as well as the personal choice of the surgeon. Adhesive plaster strapping in an efficient but temporary form of support. The cloth loop of Soule attached to a metal upright is a simple and more permanent appliance. Several forms of braces are used, the most popular of these being the Taylor clubfoot brace. It should be emphasized here that none of these braces are corrective in effect, but should be employed only to maintain correction after it is complete. Practically speaking, support will be found necessary until the child has been walking for several months and is thoroughly "set" on his feet, with no tendency toward turning in.

The third stage of treatment implies the continued observation of the case from time to time, and the correction of any beginning abnormal posture, if such should present itself, by simple measures, such as raising of the outer side of the shoe and proper exercises and manipulations.

The treatment as above outlined is all that is necessary in practically all cases

taken under eighteen months of age. Occasionally one may find a case in which the Tendo Achilles is unusually resistant, and in which achilleotomy may be performed after the tendon and its muscles have been stretched as far as practicable. In this way advantage is taken of the tendon as a fulcrum in correcting the rest of the deformity, after which the tenotomy will leave less space in the tendon to be repaired, thus assuring a stronger and more perfect foot than if it had been done as a primary procedure.

Many details must necessarily be omitted in a paper of this length; so, without attempting to do more than outline what I believe to be the best treatment in the great majority of cases, with my reasons for the same, I shall close with the following conclusions:

1. Correction by the plaster of Paris bandage places the treatment entirely in the hands of the surgeon.

2. Normal anatomy and function are more perfectly restored by this than by any other known method.

3. There is less atrophy from a good plaster dressing than from most of the other appliances.

4. The earlier the treatment is begun the more easily is a perfect result obtained.

5. Tenotomies are seldom necessary and should never be performed at the beginning of treatment; the other elements of the deformity must be corrected first.

6. An apparent correction by any method does not constitute a cure.

7. The so-called disadvantages and dangers of the plaster dressing, such as excoriations, sloughing, discomfort, atrophy, etc., do not obtain if it is properly applied.

8. Extreme over-correction must be accomplished. Failing this, the normal range of foot motion cannot be attained, and relapse or incomplete cure will be the result.

SYPHILITIC INDURATING EDEMA,
WITH REPORT OF A CASE.*

BY C. F. ANDERSON, M.D.,

Nashville, Tenn.

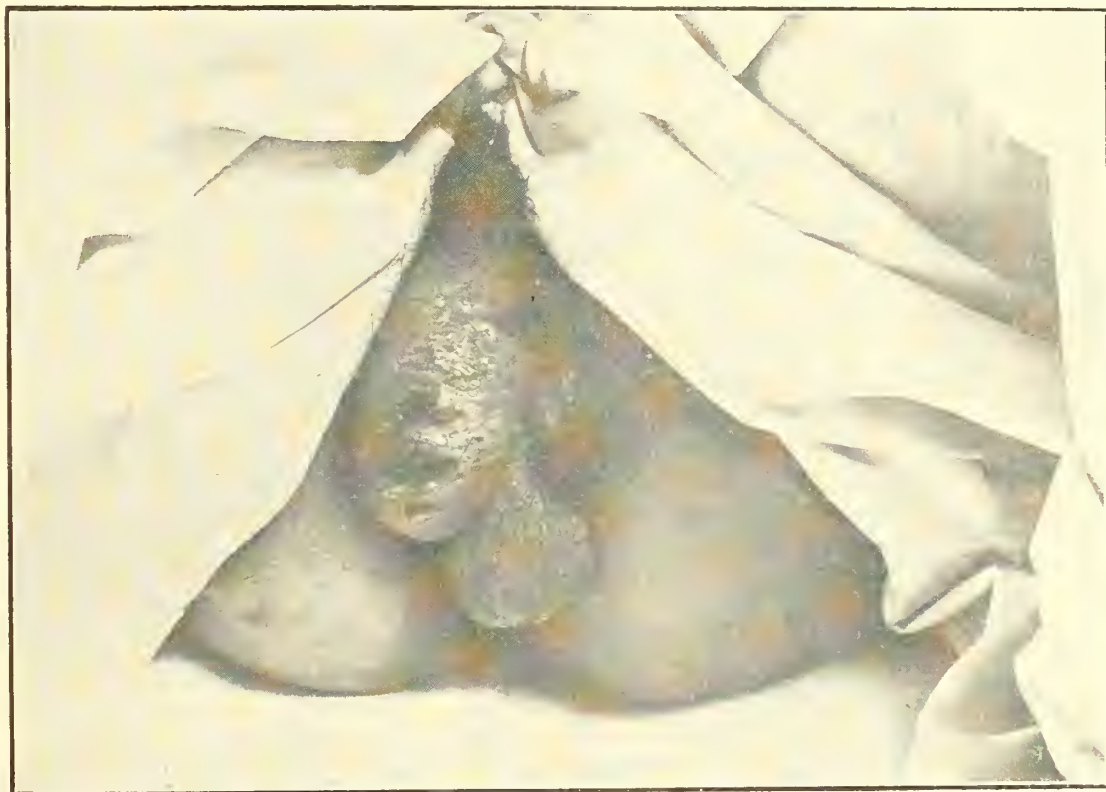
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University.

Syphilitic indurating edema of the vulva is a very rare condition. The literature on the subject, so far as I have been able to find, is confined to a single article written by Dr. Robert W. Taylor, of New York, and read before the Surgical Section of the A. M. A. in 1907, in which he reports several cases that he had observed during a long

article, which, fortunately, is a very comprehensive one.

Indurating edema most frequently complicates the initial hard chancre, but it may develop at any stage of the disease. However, it is always an expression of active syphilis. For this reason they may be classified as early and late lesions.

The initial sclerosis may involve the whole vulva or any part of it; most frequently the labium majus, or one side, is involved. It begins in an insidious manner; the early lesions follow or seem to be a continuation of the induration of the chancre itself. It is not painful, tender, and has no



period of years of both private and hospital practice.

Since I have seen only two cases, one of which I will report at this time—the other was reported by my colleague, Dr. Burch, three years ago—my remarks necessarily will be drawn largely from Dr. Taylor's

local rise of temperature—in fact, it does not present any inflammatory symptoms *per se*. In those cases that are continually bathed in a gonorrheal or leucorrheal discharge, and owing to uncleanness, excoriations may be produced, with the resulting inflammatory complications. This indolent enlargement continues to grow slowly, but surely, and may reach an enormous extent.

* Read before Nashville Academy of Medicine, November, 1911.

On the other hand, the growth may be very rapid and reach its acme in a few days or weeks. It is hard, in many instances feels like bone or cartilage; others have a dense, elastic feel very much like the cartilage of one's ear. Any one case may present different degrees of hardness in different parts.

Though indurating edema is more commonly seen in the primary and early secondary stages of syphilis, it may occur at any time or stage of the disease; and while the edema of the primary and early secondary stages usually accompanies or follows the active lesion, that of the later periods may be unaccompanied by any previous or present syphiloma.

It very often seems to be developed by vaginal discharges and also by traumatism. It has also been seen in which irritated herpes and chronic chancroids have been the starting point.

Many cases occur in which the edema is limited both in extent and duration; this is probably because these cases get sufficient and efficient treatment at the time. I believe we all observe cases of this kind that go unrecognized. But few cases are reported in which the tumors have reached sufficient size to be dignified by the name of indurating edema.

If the diagnosis is made early and energetic treatment instituted and pushed, both local and constitution, we are told by Taylor to expect resolution, but that some cases prove refractory.

If the tumor is large and does not seem to be influenced by treatment, it is fatal to be influenced by treatment, it is futile surgical removal.

The sequelae that have been observed are, in their order of frequency: general atrophy with deformity, which produces a condition like kraurosis vulvae; epithelioma; chronic cellular hyperplasia; elephantiasis; gangrene and phagedena.

In many cases, chiefly in uncleanly, dissipated women with vaginal discharges, ulceration is observed in various degrees as a result. It may be superficial, or it

may lead to sinuses which perforate the urethra, bladder, vagina and rectum, and even open by fistulous tracts about the buttocks and thighs. In these bad cases phagedena and gangrene may later develop.

CASE REPORT.

A colored woman, age 22, presented herself at my clinic in January, 1910, giving the following history:

About two years ago a small ulcer appeared on the right side of the vulva, which gradually enlarged. With this ulcer there was a considerable amount of swelling, which continued to spread until the time of removal. The ulcer healed in about two months' time and was never painful. There have been excoriations at different times during the past two years. Has never had a general eruption (although there are evidences of an eruption). Has taken some blood medicine at different times during the past two years, but not long at a time.

On examination the right labium majus was found to be very much enlarged and very hard, with many excoriations. The right labium minor was enlarged and hung out of the vulva by a pedicle; was the size of a large pear, hard and elastic.

The left labium majus was not much enlarged or indurated. The left labium minor is much enlarged, hard and protruding.

Wasserman reaction positive by Dr. Litterer.

Diagnosis—Syphilitic indurating edema.

Operation—Complete removal of both right labium and part of left labium minor.

Wounds healed kindly.

DIET IN TYPHOID FEVER.*

BY K. S. HOWLETT, M.D.,
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My reasons for bringing before this society a paper upon so trite a subject as diet in typhoid fever are four-fold, viz.: First, to bring out the fact that the whole subject is not comprehended in the simple advice so often given, viz.: "To give the patient liquid nourishment."

* Read before Middle Tennessee Medical Association, Gallatin, Tenn., November, 1911.

Second. That the universal teaching of the text-books to make milk (meaning thereby sweet milk), the chief base of this liquid diet is one that is not wise or rational, and meets the approval of very few observing general practitioners.

Third. That the modern tendency toward more liberal feeding of whatever the patient's appetite calls for, solid, sometimes even course food, is rather a dangerous doctrine.

Fourth. That the practice of systematically forcing food, either liquid or solid, into these patients' stomachs at regular intervals, without regard to their desire, or to the severity of the symptoms presented, is irrational and oftentimes disastrous. Typhoid fever is characterized by infection or toxæmia, with delirium and other nervous manifestations, by ulceration of the intestinal glands oftentimes causing perforation or hemorrhage, and by a rapid and extreme wasting away of all of the tissues, in which the muscles, both voluntary and involuntary, participate. If we could feed a typhoid patient in sufficient quantity, and of food of such digestible and nutritive quality as to prevent this latter without at the same time augmenting the dangers of the other two, we would indeed have a happy combination. As these two most desirable ends seem, however, to be incompatible one with the other, the question of diet becomes a more complex matter. From Sydenham, the profession inherited the idea not only to starve a fever, but also to treat all fevers of whatever nature or cause by depletion, blood letting and purgation. Graves, about 1840, successfully combatted this theory, and taught the doctor to husband the patients' resources by avoiding all depleting measures, and to preserve, and add to the strength and vitality by absolute freedom from physical exertion, and by giving all the nourishment possible. From that time to the end of the century, however, the diet was rigidly liquid, with milk as a basis, if not the whole diet. For the past fifteen years there is a growing tendency toward a more varied diet, including meats

and solid foods, and there exists at this time a wide diversity of opinion in the teaching as well as the practice of feeding typhoid cases. And this difference is confined to no school or section. McCrea, in *Osler's Medicine*, says the diet must be liquid, easy of digestion and absorption, with the main reliance on milk, though he stresses the importance of having the milk pure and uncontaminated, and advises giving from 24 to 36 ounces in twenty-four hours. He says, however, that there is always more danger of overfeeding than underfeeding these patients, that it is well sometimes to withhold all food for days in succession, and that there is little danger of giving too little nourishment during the height of the attack or in exceptionally severe cases.

On the other hand, I heard Thayer, of the same school as McCrea (Johns Hopkins) in instructing his class in the wards of that hospital two years ago, advocate giving these patients steak, chops, soft toast and eggs, stating that such diet was often longed for and would be taken with relish, often with avidity. A conservative example is Shattuck's Diet as given in the Massachusetts General Hospital as follows:

First. Milk, hot or cold, diluted with lime water, vichy or apollinaris, peptonized milk, buttermilk, etc. Second. Soup, meat or vegetables. Third. Prepared foods, Horlick's Milk, Melin's Food, etc. Fourth. Fresh beef juice. Fifth. Gruels, strained cornmeal, oatmeal or barley, albumen water with lemon. Sixth. Ice cream. Seventh. Whole eggs, raw or soft boiled. Eighth. Finely minced meat, lean meat, scraped beef, or oysters. Ninth. Crackers, soft toast, macaroni, jelly and apple sauce. An example of an extreme table in this direction is that of Busheyev's Diet in Kief's Military Hospital, Russia, and which is as follows: Seven a. m., tea with roll; 8 a. m., 400 C. C. liquid oatmeal, barley or wheat porridge; 9 a. m., two boiled eggs, hard or soft, as patient desires; 10 to 11 a. m., glass of milk with roll, a half cutlet or a bit of boiled meat; 12 to 12.30, bowl of soup and a little preserved fruits; 3 p. m.,

tea with roll; 6 p. m., chicken or beef soup, a bit of chicken or pudding of some kind; 8 p. m., milk with roll; through the night coffee or tea with milk, or cognac three or four times, and wine in the morning. In looking over this table one is forced to the conclusion that the Russian appetite is very much more voracious than the American, or else that their typhoid is very different from that met with in this country. These widely divergent views simply indicate that neither is entirely correct, and is only another evidence of the wisdom of the advice given so long ago and so oft repeated, viz.: "Treat the patient and not the disease." This applies with peculiar force to feeding typhoid cases. It is manifestly just as irrational or more so to prescribe a routine diet as it would be a routine treatment for all typhoid cases. We should individualize and feed each patient according, first, to the condition of the stomach, the taste and appetite, and the amount of nausea present; second, the condition of the bowels, the character of the stools, the presence or absence of tympany and diarrhoea; third, the capacity to digest and absorb, remembering always that in this disease especially, a clean alimentary canal is desirable, even essential, and the ideal diet is the one most completely and quickly digested and absorbed, and the one which leaves the least residue; fourth, the severity of the symptoms, the height of the temperature, and the condition of the nervous system; fifth, the tastes and appetite of the patient, the presence or absence of hunger is, in my opinion, a fairly safe indication for giving or withholding food. One of the earliest and most constant symptoms is a lack of appetite and an aversion to any kind of solid food during the height of mild cases and throughout the severe ones. This is the first objection to the above detailed liberal dietary tables, and also furnishes the first objection to sweet milk. Almost, without exception, these patients dislike sweet milk (preferring any other kind of cold drink) and tire of it quickly. No matter what the diet selected, whether liquid or solid, the patient's peculiarities of tastes

must be consulted. The food may be ideal in every other respect, but if it is distasteful, it should not be forced. To do this will disgust the patient, produce nausea, and probably make them loath to take other food. Second, the condition of the bowels. If a patient has much diarrhoea, with frequent thin stools, it is best to withhold all food for one or more days until this condition is corrected. This is certainly much better than to continue feeding, and use opium or bismuth to hold the bowels in check. The same should apply where there is marked tympany, distention or tenderness. Every one advises withholding all food, even water, if there is hemorrhage or suspected perforation, and no harm is done from the enforced temporary starvation. The worst ulcers are usually near the caecum, and this is where perforation nearly always occurs. This is also where undigested food, even ordinary fecal matter, is most often arrested and does harm; then why not begin withholding food so as to have a clean alimentary canal just as soon as the tympany and distention give us the first note of warning. Third, the patients' digestive power. It has been well said that "what is one man's meat is another man's poison," true in health as well as in sickness. One person can't digest milk, another can't take eggs, and another meat, even meat juice. These digestive idiosyncrasies must be inquired into and considered in ordering a diet for a typhoid case. Anything which gives gastric distress, and more especially which shows up undigested in the stools, must be prohibited. Even buttermilk (in my opinion the best of all foods) must be cut out under these conditions. The power of absorption is more uncertain matter and more difficult to form an estimate of. If the stools are rendered more frequent and larger, even though there be no evidence of undigested particles, then the amount of nourishment should be lessened, unless intestinal irritation be increased. Fourth, the severity of the symptoms. If the patient has high temperature with delirium, stupor, or other untoward nervous phenomena, swallowing his food mechani-

cally and unconsciously, it is certainly unwise to continue to pour liquid nourishment into such a patient's stomach and impossible to get him to take solid food at all. In these cases every vital function, the digestive and absorptive power among them is too profoundly obtunded to be carried on properly. And in this condition it is certainly most wise and advantageous to withhold all food for days and days until these symptoms have been much improved, and in my experience this improvement comes more quickly from this plan than any other.

Now, the advocates of sweet milk claim for it that it is easily prepared, is usually taken with relish, is easily digested, and supplies sufficient nourishment, and yet, as has been said, while the text-books practically all recommend it, very few general practitioners, in the country at least, use it. One objection to it has already been mentioned, viz.: very few typhoid patients like the taste of it. They take it because they want fluid, and because they want something cold, but they take almost any other cold drink in preference. It sticks to the inside of the mouth, and the mouth of the sweet milk patient is especially hard to keep clean. Then it is by no means easily digested. The first process in its digestion is its coagulation. It is usually given in large quantities, is drunk rapidly, it being next to impossible to get them to sip it, hence the curds are large, and it becomes just as much a solid food as any other. It is the very best culture medium, and is prone to produce fermentations, distention and diarrhoea. The curds undigested appear in the stools, rendering them foul smelling and irritating. When the same occurs in summer complaints of children, it is a universal custom to withdraw all milk. Why should not the same be done in this disease? The suggestion that care be exercised to procure pure milk, that it be modified or peptonized, is good. But the best modification is by substituting buttermilk. I have had no experience with lactone tablets or lactic acid bacilli because good fresh buttermilk made in the old fashioned way has always proven entirely satisfactory. Most patients

with fever take it with great relish, preferring it to water, lemonade or fruit juices. And even when taken in large quantities it very rarely disagrees in any way. It contains all the ingredients of sweet milk except the fat, and because of the large quantity which can be taken, about as much nutriment can be given in this way as in any other. There is probably much of scientific truth and value in the buttermilk or sour milk fad started a year or two ago by Metchnikoff, after his investigation of the long-lived people of Bulgaria. It has long ago occurred to many general practitioners that buttermilk has some therapeutic as well as nutritive and refreshing value in typhoid fever. The recent suggestion as to the use of lactic acid bacilli tends to strengthen this surmise, and buttermilk thereby becomes food, drink and physic. Now, the advocates of the more liberal diet of solid foods and meats claim for it as against the liquid diet as follows:

Liberal Diet.	Liquid.
1 Satisfies the patient's appetite	Disgusts.
2 Provides sufficient calories, preserves the strength, and prevents wasting.	Insufficient calories.
3 Is poor culture medium.	Excellent culture medium.
4 Does not increase intestinal irritation.	Often does.
5 Does not increase mortality, hemorrhage, or perforation	Does increase both hemorrhage and perforation.

Kinnicutt has published a table to prove all these claims. However, the difference in percentage as presented by him is too slight to be conclusive. Besides, the comparisons apply only to milk diet and do not hold good as to a more varied liquid diet. The preservation of the patient's strength, the prevention of the marked wasting of the muscle, are most desirable objects. Especially is it important to hurry up the convalescence, to guard against the development of the tuberculosis, or some organic nervous disease, or of some permanent heart lesion. But in my experience, these patients stand starvation surprisingly well.

It may, perhaps, be presumptuous for an ordinary country doctor to question the accuracy of these hospital percentage tables, but every practitioner has often seen relapses occur, after the patient seemed on the road to recovery, from overeating, or from taking even small quantities of some solid food. Isn't it probable that the same indiscretion in diet would be more likely to do harm during the height of the disease when the ulceration is most active, and the patient ready to go to pieces in many ways. It would seem wiser to guard against the dangers which immediately threaten rather than fly against more remote; to attempt to shorten the active stage of the disease even at the risk of prolonging the convalescence. Besides this, as has been said before, it is very rare to have a typhoid case that has any appetite, especially for solid food, and hence the advice given by the advocates of this liberal plan of feeding to give the patient everything he desires is a harmless one except in very rare cases. Hence of the two extremes, I am constrained to believe that the dangers attendant upon liberal feeding of solid food is greater and more eminent than that of the *near* starvation plan. The safest method lies between the two, and I beg to submit my favorite dietary varied of course according to indications which I have attempted to set forth in this paper. The following is scheduled for twenty-four hours: First, buttermilk, from one to three pints; second, the whites of two to three eggs with or without lemon juice, or one or two whole eggs if desired, gelatin when the patient tires of the egg albumen; third, one cup of some cereal gruel, one bowl of chicken or beef soup in which is cooked tomatoes, potatoes, rice, peas or beans, according to the individual taste; fourth, two feedings of from one-half to one ounce of freshly prepared beef juice; fifth, fruit juices almost ad libitum; sixth, coffee with sugar but no cream. Now, of these the buttermilk and egg albumen are the only articles urged or pushed, the others being left practically to the patient's appetite and desire.

CHRONIC ALCOHOLISM; WHAT CAN AND WHAT CANNOT BE ACCOMPLISHED BY TREATMENT.*

BY GEO. E. PETTEY, M.D., MEMPHIS, TENN.

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Until the last quarter of a century alcoholism was almost universally regarded as a mere moral perversion, a bad habit entered into and continued because of moral degeneracy. Numerous efforts were made to reclaim and reform the drunkard. Almost all of these consisted in an appeal to the moral and emotional nature of drinking men, and many were thus influenced to abandon the use of alcohol, but a large majority were unreached by these efforts. In more recent years the wretched condition of these men have appealed strongly to scientific men who were students of human nature as well as of abstract science, and the causes or influences which lead such men to enter upon and continue the use of alcoholic beverages has been studied from every viewpoint. These studies have fully established the fact that only in a very small per cent of cases is alcoholism a mere moral perversion, but that it is in the truest sense a disease, a disease having a well defined and demonstrable pathology. Since the disease theory of chronic alcoholism has been accepted the question has naturally arisen, what can be done by treatment for this disease? Is it curable? To this question both an affirmative and a negative answer can be made, and each will be correct when applied to a certain class of cases.

Chronic alcoholism is not only a disease itself, but in many instances it springs from other diseases, and it is certain that other diseases grow out of it. These diseases may be either physical, mental or moral. To cure any disease the cause must be removed. In some cases of alcoholism this can be done by treatment, in others it cannot, then

* Read before Tennessee State Medical Association, April, 1911.

the question naturally arises, what class of cases is curable and what is not? In endeavoring to answer this question it is necessary to consider the type of the addiction as well as the influences which led to its formation. For the purpose of study, as well as for treatment, it is best to divide alcoholic subjects into two general classes, regular drinkers and periodical drinkers.

There is wide difference between the influences which lead the periodic alcoholic to go on a spree and those which prompt the regular drinker to continue the use of his beverage.

REGULAR DRINKERS.

Probably 80 per cent of all persons who drink alcoholic beverages get into the habit inadvertently, unintentionally and without any definite purpose in view. Among them may be found persons of the highest aims and who, primarily, had sound bodies and minds and good habits, but who began the use of alcoholic beverages in a social way or with the erroneous idea that their effects would protect them from some prevalent disease, such as malaria, etc. Such persons continue the use of alcoholic drinks without mature thought as to their effects on them and certainly without any purpose to go to excess or to dissipate in any way, but no matter how begun, the frequent use of even a small quantity of alcohol creates a demand for increasing quantities, and this grows by almost imperceptible degrees until there is a daily consumption of considerable quantities of some alcoholic drink.

For a time the effects of this beverage seems to improve the health, to impart greater mental and physical vigor and to generally promote the well-being of the subject, but these benefits are more apparent than real. In fact, they are not real at all. The effect of this agent merely builds up a state of apparent hypernutrition by restricting the excretion of waste products, and an unwholesome bodily state is brought about in which the demand for the effects of alcohol is increasingly felt, and the victim feels very much more comfortable when under the influence of alcohol

than when he is not. Thus almost imperceptibly the demand for stimulants grows, the victim becomes more and more dependent upon them and larger and larger quantities are required to meet this demand.

The daily consumption of these considerable quantities of alcohol necessarily bring about such changes in the system as to create an imperative demand for their continuation.

After reaching this stage the victim feels that he cannot begin his day's work without his morning drink; there is a degree of lassitude, a lack of vigor which he seems totally unable to throw off without the aid of his stimulant. As the disorders growing out of the use of alcohol progresses, one drink is not sufficient to give the desired support, then two, three or more are taken in close succession, and this bracing process is continued throughout the day and from day to day and from week to week.

The effects of this prolonged and free use of alcohol brings serious impairment of the digestive organs, the appetite is variable or absent altogether, unless freshly stimulated by an extra drink, and if at this or any subsequent stage the victim makes an effort to discontinue drinking, such a state of nervousness arises as to drive him to resume the stimulant. The entire system has by this time become so saturated with toxic matter that a condition of intolerable nervousness arises whenever the system is allowed to get from under the, now sedative, effects of alcohol, and no matter how acutely conscious the victim may have become of his slavery to alcohol, or how heroically he may struggle to throw off the yoke, he finds himself unable to do so by his own efforts. The prolonged free use of alcohol brings on such disorders of the system as to lead the best of men, when in its grasp, to continue to seek relief from these disorders by increasing the quantity of alcohol consumed. Whether that course is imperatively necessary or not it appeals to them as being the one readily available remedy, the panacea for every ill, and it is so used.

A majority of habitual users of alcohol in this country belong to this class, and

many of them would gladly quit drinking if they could ever get the poison out of their systems and reach a state in which they could live in comfort without it, but they seem never to be able to do so. They never get entirely sober and their systems are never normally free from the products of tissue waste; on the contrary, they are habitually in an extremely toxic condition and are only comfortable when the paralyzing effects of alcohol blunts their sensibilities to the irritating effects of this poison.

In habitues of this class the addiction has a purely physical basis which is the product of alcohol alone. This consists of both structural lesions and functional derangements, but the structural lesions have little influence toward impelling the victim to continue the use of alcoholic drinks. The functional derangements are the only disorders growing out of the use of alcohol of which he is conscious, but these throw him into extreme distress when he attempts to go without the aid alcohol gives him. These functional derangements consist mainly of a chronic catarrh of the stomach accompanied by an intensely toxic condition of the system, but as these yield readily to proper treatment, alcoholic patients of this class are curable. It is folly to talk to a man in such condition as this about reforming his life and stopping the use of stimulants by his own efforts. The forces which impel him to continue the use of alcohol are stronger than any will power he is able to exert. In order to put him in condition that his own will, his normal impulses may control him, his system must be thoroughly renovated and the physical demand for the effects of alcohol removed, then his normal nature can assert itself and then, and then only, can he control himself by the exercise of his will power.

In the second class of regular drinkers I would place a small per cent of persons who were born with or who from disease in early life acquired a defective physique and an unbalanced nervous system, persons who, because of such defects, have never been normal either in nervous system or physi-

cal organization. When such persons, in seeking something to overcome their habitual discomfort, experience the effects of alcohol, they readily fall a victim to its seductive influences. For a time it seems to fill the vacant place and to be the one thing lacking in their lives; it overcomes that discordant nervous condition which they so much dread, and they feel that they have found a panacea for all their ills; but this relief is of short duration. The demand for the effects of alcohol grows very rapidly in such persons and its continued use brings on the same pathological changes that it does in others. The system soon becomes extremely toxic. This irritating matter greatly aggravates their former nervousness, so that, the two conditions together now make such an imperative demand for the effects of alcohol that the victim cannot resist it and he keeps himself constantly saturated with alcohol; in fact, after reaching this stage he must do so to enjoy the least degree of comfort.

But little can be expected from treatment in this class of cases unless it is found that the original discordant nervous element can also be removed by treatment. When it is found that these causative conditions are such as to be amenable to treatment and the treatment for the addiction embraces not only such treatment as would be necessary to give relief in an ordinary case, but also such other measures as may be required to restore the primarily unbalanced nervous system to a normal condition, much benefit may be derived from treatment even in these unpromising cases, provided a reasonable degree of moral fibre was originally present.

In a third class I would place another but relatively small proportion of regular drinkers. To this class belong those who drink as a pure dissipation, persons who are deficient in moral fibre, lacking in purpose, supremely selfish, willing to gratify the desires of the present moment at any cost to themselves or others; those who are simply drifting through the world without rudder, compass or objective port.

These defective traits of character may

be due either to inherited tendencies or to early environment. Persons of this class drink because they prefer to do so and they would return to the use of alcoholic drinks even if some one took them up and gave their system a thorough renovating and removed all physical necessity for the effects of such drinks. In cases of this class more than human agency would be necessary to effect a cure. Not only would it be necessary to renovate their bodies and put them in normal physical condition, but it would be necessary to effect a most radical change in their moral nature, a complete transformation of their purposes in life and nothing short of the grace of God is sufficient for such a work. Human agency will not avail.

Fortunately only a small proportion of the regular drinkers belong to either of the two classes last mentioned; the great majority are of the class first described in this paper. They are men of good families, of excellent traits of character, of high aims, chivalrous, generous to a fault, truthful and honest; in fact, most of them are men with whom no fault can be found except this one weakness, and that due to the fact that they have drifted into the clutches of this monster. Victims of this class only continue to drink because their will-power and self control, and their ability to correctly estimate their own condition, has been so undermined by the effects of alcohol that they cannot extricate themselves from its clutches, they cannot of themselves retrace their steps. Upon arising in the morning they find themselves totally unable to begin their day's work without the bracing effects of alcohol, and because of the urgency of this physical demand they continue to seek what relief they can get from it from day to day. When such men as these are freed from the domination of alcohol, when the physical demand for it is overcome and they are put in a normal condition they almost invariably remain free from it. Failure to permanently benefit such men as are described in the second and third divisions above mentioned should not

be allowed to discourage us or to render us less enthusiastic in our efforts to rescue the more numerous and really noble army of enslaved ones.

PERIODICAL ALCOHOLISM.

There is a wide difference between the influences which lead to periodical alcoholic sprees and those which lead the regular drinker to continue the use of his beverage. Periodic alcoholism may spring from a variety of causes, but these may be studied to advantage under four types which may be enumerated as follows: Dipsomania, real or symptomatic; moral cowardice; bad environment with lack of stability of character; bad environment, with an ever-present but usually successfully resisted appetite for liquors.

Dipsomania—Dipsomania is defined to be "an uncontrollable desire for strong drink," but this term should be restricted to those cases in which this desire or impulse springs from a real mental disorder, a true mania. It should not be applied to cases in which the desire for drink only becomes uncontrollable when it is excited or intensified by some general physical derangement, or to cases in which the desire is continuous. A better definition would be periodic insanity taking the form of an uncontrollable desire for strong drink.

Real dipsomania is very rare, but that it does exist cannot be denied. Most writers leave the impression that such attacks are due entirely to some obscure structural brain lesion or inherited mental defect. It is doubtless true that there are persons in whom a real mania of this type occurs because of an inherited mental bias, or perverted nervous organization, independently of the general physical condition, but, in my judgment, such cases are extremely rare. In a large majority of cases which are thus classified the attack only occurs when excited by an added general systemic derangement, an acute intestinal or auto-toxemia. The irritating effect of this toxic matter serves as an exciting cause of an outbreak. In many instances these attacks

may be warded off or prevented altogether by keeping the system free from toxic matter.

Where outbreaks of this kind occur solely as the result of an inherited mental defect, treatment cannot be expected to be of material benefit, but in cases in which such attacks only occur when an exciting cause, such as an acute toxemia, contributes its influence, then treatment can be a material benefit provided it embraces such instructions in the manner of living as to enable the victim to avoid the occurrence of these toxic states.

Moral Cowardice.—Another and probably the most hopeless class of periodic drinkers are those who drink as an expression of moral cowardice. These are men who have no particular craving or appetite for liquors, who will say at almost any time that they do not care for the taste or primary effects of alcoholic drinks, but who have learned from experience that alcohol will blunt their sensibilities and bring them surcease from cares and worries which they have not the manhood and moral courage to take up and bear, and, from time to time they seek forgetfulness in the effects of alcohol. A man of this class will quarrel with his wife or a friend and go off and get drunk for spite, or he may have some adverse business experience which to others would be trivial, but he, not having the moral courage to face it, runs from it and seeks oblivion in the effects of alcohol.

Little if any good can come from treatment in patients of this class. Therapeutic measures cannot remove from their lives these defective traits of character or impart to them that degree of moral courage which is needed to fit them to fight the battles of life in the open and resist the adverse currents which drift them from a safe and sober mooring.

Instability of Character with Bad Environment.—In another class of periodical drinkers the sprees are due to bad environment coupled with instability of character. These are the social drinkers who lose control of themselves as soon as one drink is taken. Many of these are men of estimable

qualities, chivalrous, good-natured, kind, and in every way lovable men, but they are deficient in self-control, fixed purposes and positive traits of character. They are good-natured fellows who drift with the current and allow others to dictate their course. These men, when away from their drinking associates and out of temptation, remain entirely sober and would not think of going alone and deliberately beginning to drink; they have no craving or appetite for liquor which they are not fully able to control, but, they are negative characters, and when thrown with drinking associates they do as others do. They are of the type of social drinkers who lose control of themselves as soon as they are slightly under the influence of liquor. When once started, such men continue to drink until some one takes control of them and assists them to get out of the adverse currents. Then a period of entire sobriety follows only to end in another spree when they again come under these unwholesome influences.

Treatment in such cases can only be successful when followed by an entire change of environment. The old associates must not only be given up, but the one seeking to reform his life must be thrown with sober and moral people whose positive influence for good over him will be sufficient to enable him to stand firmly in his new position, notwithstanding his defective traits of character.

Bad Environment with an Ever-Present but Resisted Appetite.—Another type of periodical drinkers are those who have an inherited or acquired thirst or craving for liquor which is ever present with them, but who, from strong convictions, contend against this weakness with a courage that in many cases is really heroic, and, under favorable circumstances, they succeed in controlling themselves, but, when thrown with drinking associates, or when brought under other strong temptation, then they find themselves unable to resist both the ever present thirst and the temptation. Under these circumstances they begin to drink, and as soon as one drink is taken, their resisting power is gone, and they throw

themselves into the spree with a vigor and abandon which is not known to the more timid or less resolute. They continue to drink until the stomach rebels and will no longer retain the liquor; then they go through a period of extreme distress and remorse, and finally get back on their feet.

Periodical drinkers of this type are more amenable to treatment than any other form of periodical drinkers, because the craving, the thirst against which they contend, can be overcome, in fact, entirely destroyed. In addition to this their attitude toward liquor can be so changed as to render its taste, smell and effects repulsive to them. When men of this type are given this much aid they find themselves quite able to successfully contend against the influence of drinking associates and to resist other currents of influence which, when associated with their former craving, would have been sufficient to cause them to fall.

PRINCIPLES OF TREATMENT.

Before undertaking to treat any disease we should endeavor to ascertain the nature of the condition to be met; whether such a condition has a real, structural pathology; or, is only functional derangement, and whether it is a physical or a mental disorder. That the prolonged use of alcoholic stimulants does cause serious structural lesions of the brain, liver, stomach and other organs cannot be denied, but such lesions are not the only or even the principal reason for the continuation of the habit. In some cases, as we have seen in the preceding, the use of liquors are continued from preference, or because of some mental or moral defect, but in the great majority of cases alcoholic drinks are continued because of a strong demand in the system for their effects. The habit has a real physical basis. This demand for the effects of alcohol is due mainly to the toxic condition of the system. Alcohol blunts the sensibilities of the nervous system and retards the excretion of the products of waste. The life of the human organism is a continuous process of waste and repair. When the excretion of this waste is retarded, even to a

slight degree, day by day, the system finally becomes so saturated with poisonous matter as to cause serious functional derangement of every organ of the body. One in this condition finds it necessary to keep the nervous system constantly blunted with the effects of alcohol or other narcotic in order to obtain a reasonable degree of comfort. While it is true that alcohol has caused these disorders, still its effects relieve the acute distress springing from them more promptly and in a manner more acceptable to the sufferer than anything else with which he is familiar, therefore he continues to seek what comfort he can get by taking more alcohol, and thereby burns the taper at both ends.

In endeavoring to bring about such a change in this condition as to render the further use of alcohol unnecessary, the first and most important step is to thoroughly cleanse the system from the products of waste which the effects of alcohol have forced it to retain. In doing this, the bowels, kidneys and skin should all be made to do their full share; in fact, for a time, these should be made to do many times their ordinary duty.

Just in proportion as the excess of toxic matter is eliminated will the nervous system become quiet and the urgent demand for the effects of alcohol disappear. As a rule, in the course of three or four days the system may be cleansed of toxic matter as to permit the withdrawal of alcohol without risk or discomfort to the patient. I do not consider it safe or at all advisable to abruptly withdraw alcoholic stimulants from one who has been using them in large quantities without first preparing the system for such withdrawal. After the system is properly prepared for the withdrawal it may be made with safety and without discomfort, but I cannot agree with the arbitrary rule of cutting off the alcohol as soon as the patient is taken in hand.

Up to this point the treatment of the several classes of alcoholic cases is practically the same, as all of them require elimination of the toxic matter and the withdrawal of alcohol, but from this point on the several

cases will require radically different lines of treatment. The particular nature of the treatment required to complete the cure will depend upon the cause, or set of causes, which originally led to the formation of the habit, as well as those which have had an influence in its continuation. If these were purely mental, then treatment calculated to overcome a mental disorder should be given. If they were moral or social, then these influences should be looked into and every effort made to direct the patient's future life so as to protect him from these damaging influences and prevent a return to his old haunts and habits.

If the patient belongs to the more promising class, the regular drinkers, in which the habit was continued because of the usual mental bias favorable to the use of alcohol, and because of the deranged physical condition resulting from its effects, then the succeeding step in the treatment should be to neutralize or eliminate the remnant of alcohol remaining in the blood, to overcome any appetite which may remain for it, and to supplant the mental bias favorable to alcohol with a dislike or complete disgust both for its taste and effects. The means available for these purposes are so numerous and their application so varied that they do not admit to detailed discussion in an article of this kind. In addition to the well known therapeutic agents, static and other forms of electricity, vapor, shower, neutral or electric baths, suggestion, and in some cases even hypnotic suggestion, discipline and physical training can be used to advantage.

While these corrective measures are being employed, active therapeutic measures calculated to overcome the catarrhal condition of the stomach should also be employed. This condition is the remaining disorder which would exert the greatest influence toward a return to the old habit, because of its effect in impairing digestion.

Fortunately, catarrh of the stomach yields readily to treatment in these cases after alcohol has been discontinued, but active treatment for this disorder is essential, and it should be continued until all

trace of it has disappeared and the patient's digestion is perfect. He should be able to eat and enjoy three good meals a day. Patients of this class need the strength derived from a hearty breakfast to take the place of the support they formerly received from alcoholic stimulants. No part of the treatment is of greater importance than this, since, if it is not successfully carried out, the patient will not be as secure from relapse as he should be. Impaired digestion, with its attendant lack of strength, operates as an ever present influence suggesting the need of some stimulant, some outside supportive, and this amounts to an autosuggestion to take a drink. This is a dangerous condition for the patient to be left in.

The indications to be met in some cases of alcoholism are simple, and the treatment can be easily carried out, while in others they are so complicated that the resources of the best equipped institution, as well as the skill of the most resourceful physician, will be taxed to the uttermost; but with the aid afforded by a well equipped institution, a competent physician can effect as large a percentage of cures in cases of chronic alcoholism as can be effected in any other serious ailment. The most skillful physician cannot treat them successfully at their homes. The disadvantage due to their home surroundings and to lack of complete control of his patient will defeat his best efforts. Even a general hospital does not assure the physician such control and protection as this class of patients require.

I do not feel that I should close this paper without a warning against any institution or physician offering to send a home treatment for alcohol or drug cases. Such an undertaking is worse than folly, and when a proposition of that kind does not spring from entire ignorance of the conditions to be met, it is prompted by criminal avarice. Especially fraudulent is the offer to send a remedy that can be administered in coffee, etc., without the patient's knowledge, and thus overcome the desire for liquor and break up the habit.

The time required for the successful

treatment of a case of chronic alcoholism varies from two weeks to two months. Those who promise to effect a cure in much shorter time than that promise more than they can perform. A "Three-Day Liquor Cure" is being advertised extensively throughout the country and a number of institutes have recently been opened for the employment of this method. This treatment consists of the administration of a dose of cathartic pills, and after that the hourly administration of an emetic in liquid form, the emetic consisting of either lobelia or ipecac, or of the two combined. An hour and a half from the time of giving the first dose of the emetic the patient is required to take a drink of whatever alcoholic liquor he has been using, and this is repeated every half hour until four drinks have been taken. All of these are promptly given over to the slop jar with interest. The liquid emetic is kept up every hour for the first day, but only the four drinks are offered to the patient. If he asks for more liquor it is given, and this is followed by an extra large dose of the emetic, sufficient to insure immediate and prolonged vomiting.

The second and third days' treatment are the same, only the emetic is given at less frequent intervals and only two drinks are required to be given on the second day. If he asks for more on that or on the third day it is given, and this is followed by a double dose of the emetic.

The extreme nausea and vomiting from this source, if the patient can be made to take it, is supposed to so completely disgust him with whiskey that he will not take it again. By the time he has been kept in this condition for three days he is so disgusted with whiskey, himself and everything else that an effort to swallow anything will cause him to vomit. It is true that he does not want whiskey, because he is not in condition to take and retain anything, but he is no more cured of the whiskey habit than he would have been had he drank until his stomach rebelled and he had vomited three days and nights from the effects of whiskey. His system is still in a badly disordered condition, he is extremely nervous

and cannot sleep, is totally unfit for business, and if he recovers it is because of the restorative forces of the system and not because of any curative effect the treatment had on him. Such sleight-of-hand fake methods cannot be too strongly condemned. There is no curative value in them and the public should be taught to avoid them.

In undertaking the treatment of alcoholic cases the physician should take a comprehensive view of the patient and his surroundings and endeavor to correctly estimate every influence which has any way contributed to his enslavement, and to so direct the life of the patient thereafter as to remove every one of the hurtful influences as far as it is possible to do so. The physical man must be completely renovated, and every function of the body restored to normal activity. The mental bias favorable to the use of alcoholic liquors must be eradicated, and in its stead a positive aversion to alcohol be established. The patient is to be given a new chance in life by being put back on his feet with a clear head, in full control of all his faculties, and free from the dominating influence of alcohol. The consummation of such a work is certainly worthy of the best efforts of any man.

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SOME NOTES ON THE PSYCHOSES OF ALCOHOLISM.*

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The term alcoholism implies the morbid effect of excess in the use of alcoholic drinks, but with the external factor, there are always associated certain internal factors, in the form of predispositions, and acquired susceptibilities, which on the one hand determine the vicious habit and on the other hand contribute to the production of the morbid reaction.

Apart from these individual conditions considerable importance is to be attached to the numerous and various social factors.

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which give the impulse to the alcoholic habit or maintain and strengthen it.

Much has been written upon the causes of alcoholism and a great many statistics have been compiled upon the subject, so inasmuch as I have no special thought to emphasize in this connection, I shall make it the purpose of this paper to outline the chief symptoms of the more common alcoholic psychoses with a few remarks regarding the course and prognosis of each.

Merely for convenience in study and for the purpose of description, I have chosen to classify the various forms of alcoholism as follows:

I. Acute Alcoholism.

- (a) Acute Physiological Drunkenness.
- (b) Acute Pathological Drunkenness.

II. Chronic Alcoholism.

- (1) Dipsomania.
- (2) Delirium Tremens.
- (3) Alcoholic Delusional Insanity.
- (4) Alcoholic Paranoia.
- (5) Alcoholic Pseudo-paresis.
- (6) Poly-neuritic or Korsakoff's Psychosis.

(a) By *physiological drunkenness* is meant the reaction of normal organisms to acute alcoholic intoxication. Within this class is found the ordinary tipsy individual with which each and all are familiar. This class of patients seldom ever get into more serious trouble than that of being charged with drunkenness; they are non-abusive usually, quite talkative, silly and harmless, so I will pass on without further comment.

(b) *Acute pathological drunkenness* is that form of acute alcoholic intoxication differing from the former class, in that it occurs in individuals who are degenerates by nature and in those who are predisposed to mental diseases, epileptics, hysterical subjects and others with psychopathic tendencies. It is in this class of patients that homicidal and suicidal impulses arise, fits of anger, stuporous states, and vague conditions of semi-consciousness in which the

drunken man commits shameful or criminal acts, is guilty of brutal acts, of carnal violence or murder, and afterwards has no knowledge of what he has done. The persons who are subjects of these forms of pathological drunkenness manifest exactly the same symptoms every time they become intoxicated.

II. CHRONIC ALCOHOLISM.

The mental disturbances in chronic alcoholism begin in an insidious manner and progress slowly, so that it is impossible to draw a distinct line between the normal chronic intoxication and the states that are distinctly pathological. After they have reached the distinctly pathological states I shall attempt to describe each of the more common forms separately, but the ordinary physiological symptoms occurring as the result of chronic alcoholic intoxication present the following rather definite characteristics: There is a gradual and progressive *enfeeblement of the intellectual faculties*, in which the *impairment of memory* and of the *moral sense* is most prominent. There develops a failure in judgment and diminution in the capacity for employment; the power of mental application gradually fails and hence it is difficult for acquisition of new ideas, consequently intellectual progress not only ceases but retrogrades, showing an increasing lack in judgment and a poverty of ideas, enhanced by a gradual failure of memory.

The moral deterioration is a prominent and characteristic symptom. There is a profound change in the moral character, and the patient soon loses sight of the higher ideals of life and the sense of honor. The patients lose all affections for their families and become indifferent to the tears of their children. There is an increase of mental irritability, which is more evident during intoxication; they are quarrelsome and abusive upon the slightest provocation; they leave the support of the family to the wife and children, whom they often beat for enough money to keep them in liquor. Others will pawn clothing or furniture or even steal in order to satisfy their appetite.

Such is the course of the ordinary chronic alcohol.

I shall now attempt to describe a few of the special pathological forms of chronic alcoholism:

(1) DIPSOMANIA.

There exists here a condition quite different from the ordinary drunkard. There arises in this patient an irresistible impulse to drink alcoholic beverages of every description (wines, liquors, cologne water, spirits of camphor, etc.). These attacks may recur and the dipsomaniac become an alcoholic. In others these attacks seem to occur at quite definite intervals and in individuals who are of temperate habits, or who may at other times actually have disgust for alcoholic drinks.

Kraepelin regards this phenomenon as one of the manifold varieties of epilepsy. The starting point of every attack of this kind is preceded by a state of *depression*, a feeling of discomfort and restlessness within, which the patient tries to escape by drinking, then under the influence of alcohol they pass through a *stage of excitement* which constantly drives them to fresh drinking, until the attack ends suddenly. It appears that when dipsomaniacs are so placed that it is impossible for them to obtain alcohol, and treated with sedatives, the attacks wear off in the form of simple and transitory depression exactly resembling that of epileptics.

(2) DELIRIUM TREMENS.

Delirium tremens is the most characteristic episode of chronic alcoholism. While by some it may be regarded as a sub-acute phenomenon, dependent upon supersaturation as the result of imbibing an unusually large quantity of alcohol, yet it very often occurs independently of alcoholic excesses or even possibly during a period of total abstinence, but it constantly has alcoholism as its foundation. Hence we may define delirium tremens as an acute psychosis in chronic alcoholism, lasting on an average from four to six days, characterized by complete sleeplessness, widespread general

tremor, disorders of consciousness, hallucinatory delirium and marked motor agitation.

General defective nutrition exists for days and even weeks before the attack; in this gastritis plays an important role; the patient takes but little or no food for days, suffering from anorexia, nausea, vomiting and gastric pains.

The psychic symptoms present disorders of consciousness involving the notion of the external world, leaving intact the notion of the personality (*i. e.*, the auto-psychic orientation). You may converse with the patient some time without noticing his mental disturbance, till you suddenly find he has no idea where he is, or if he has one, it is erroneous, and completely mistakes every one present. There is a want of clearness in his ideas of time and place, with almost complete collectedness. He is not disorientated in regard to himself; he will tell you his name, his occupation, his residence, and can accurately recite incidents occurring at quite recent periods up to the day or even a few hours before he became delirious.

There is present illusions and hallucinations which appear at first only at night, but later become constant and incessant. They present two general characteristics: (1) They are painful; (2) they are combined in such a manner as to form complete scenes and create around the patient a whole imaginary and often fantastic world. They affect all the senses, but especially the *sense of sight*.

The visions of delirium tremens are always mobile and animated; the patient sees small animals, snakes, bugs, frogs and fleas in the folds of the bedclothes, while large animals and monsters come in at the door. The devil and his imps are omnipresent, peering in at the windows or crawling out from under the bed.

They hear all sorts of noises, roaring of beasts, ringing of bells, firing of cannon, marching of soldiers; they are taunted by passersby, are cursed and threatened with death, are called thieves and murderers.

Paraesthesias of the skin lead to the ideas

that ants are crawling over them, hot irons are being applied to their backs and dust is thrown into their faces. They can detect odors of gas, sulphur fumes are being forced through the keyhole, food has a putrid taste and poison has been put into their drink.

Illusions are ever present, real objects about the room assume life, designs upon the wall paper or carpet become images of human beings, the bedding becomes creeping things, the bedposts demon guards and the attendants in the room distorted monsters. The content of the hallucinations, on the other hand, are not always of a terrifying nature. Sometimes angels are seen, they are in beautiful surroundings, richly dressed, in palatial quarters, attended by lovely maidens. Often the hallucinations make up the picture of an occupation delirium, the mechanic works at his bench, the bar tender serves his customers, the gambler deals cards, the cabman drives his horses. Again hallucinations may be made to appear by directing the patient's attention to their sensory fields and asking them what they see and hear. The attention of the patient is often difficult to gain, and it is only by means of forcible language that you succeed at all, from which they quickly relapse.

The motor activity is at times very violent, the patient walks to and fro in his room seeking his clothes, strikes the wall to open a passageway for his escape, emits cries of terror, or he whistles and sings, his action being dependent upon the character of his hallucination. The movements, though sudden and awkward, always have a psychic origin and invariably present the character of purposeful acts.

The patient who believes himself to be in the workshop goes through the regular movements necessary for the performance of his habitual work; another, the victim of terrifying hallucinations, executes the movements of flight or defense.

On viewing broadly all the preceding symptoms we observe that the hallucination of delirium tremens are like a vivid mobile dream. Just as a sleeper can be awakened, so can the patient be momentarily roused

from his delirium by a sudden interpellation. During the moments following one obtains correct responses, so that the patient may create the impression of a normal individual, but as soon as he is left alone he relapses into his delirium and agitation.

(3) ALCOHOLIC DELUSIONAL INSANITY.

The second subject to be described under chronic alcoholism is alcoholic delusional insanity. This psychosis is characterized by the sudden development of coherent delusions of persecution, based upon *hallucinations of hearing* with retention of clear consciousness.

The same etiological factors apply to this psychosis as to delirium tremens. Why some patients develop delirium tremens and others alcoholic delusional insanity is not yet known. The patient is disturbed first only at night by an exaggeration of the ordinary crackling and humming sounds so common in alcoholics, later indefinite noises, shouting voices, crying, ringing bells, blowing of whistles or firing of guns. After a time the sounds become more definite, as the call of their names or separate curse words or finally definite sentences usually in reference to themselves are heard. The sounds appear to come from the adjoining room or from a fellow workman or friend nearby. Seldom from a member of the immediate family. The remarks are always of a depreciatory nature, and they are unwilling listeners. After a time the patient becomes uneasy, distrustful and suspicious, finally developing delusions of persecution; he does not leave the house, feeling that he is being watched or followed by the police. At times their food has a peculiar taste or odor, exciting suspicion. The patients feel themselves to be the center of attraction and every one about them is watching them. They argue that they are condemned to die, and show considerable emotion; the night attendant is regarded as the executioner, and his entrance into the room is resisted to the utmost of their strength.

The consciousness in this psychosis differing from delirium tremens remains unclouded. The patients are orientated for

time and place, their speech is coherent and they are able to make an accurate statement of their symptoms. They rarely possess clear insight, but may realize that they are different, frequently accusing their persecutors for drugging them and making them crazy. Others claim to be "nervous."

(4) ALCOHOLIC PARANOIA.

Where the delusions take on some special form, as the delusions of jealousy, or where there is an attempt at systematization, of delusion, of persecution, this form of psychosis is called alcoholic paranoia.

The delusions of jealousy naturally arising between man and wife. The patients believe that the reason for this change of affections lies in the fondness of the wife for other men, or of the husband for other women. The result of chronic indulgence in alcohol with failing sexual powers, may be mentioned as a contributing factor in these delusions. Insignificant occurrences are regarded as important evidence of this infidelity. These delusions are linked with hallucinations of hearing, taste and smell, in which the patient hears noises about the house and also words from the supposed lover; he notices a disagreeable odor in the room or a peculiar taste in his food, and concludes that an effort is being made to poison him. In his attempts to systematize these delusions his reasoning is very weak, illogical and full of absurdities.

There is no clouding of consciousness, but the patient exhibits marked weakness; while they bemoan their misfortunes, yet they submit to the injustices without any attempt of assault upon the wife or supposed lover. These cases are sometimes suicidal.

(5) ALCOHOLIC PSEUDO-PARESIS.

There may develop in chronic alcoholism a condition very similar to dementia paralytica; in fact, the similarity may be so marked that the diagnosis may remain in doubt for a long time. It is of gradual onset with the characteristic alcoholic hallucinations and delusions of persecution, together with memory defects, expansive delusions and the stupidity of the paretic.

Physically there is present disturbances of speech, muscular tremor, ataxia, occasional epileptiform attacks, sensory disturbances, and changes in tendon reflexes. The differential diagnosis depends in a great part upon the course of the disease. The course in paresis being a rather rapidly progressive one, while in alcoholic pseudo-paresis the course may be protracted, yet it does not have a tendency to be progressive.

(6) KORSAKOFF'S PSYCHOSIS.

There is another syndrome of sufficiently frequent occurrence to be worthy of mention in this connection, known as Korsakoff's Psychosis. While from an etiological standpoint it seems to be a disease determined by one of three causes, namely, intoxications, infectious diseases, and exhaustion, yet inasmuch as the former seems to be the most prevalent, and further that alcoholism is the chief factor in this group, it is usually described as an alcoholic psychosis.

Under this head we have the psychosis accompanying polyneuritis, which is characterized by marked disturbance of attention and defective memory, with pronounced fabrications.

The onset of the disease is sudden, sometimes with delirious excitement. Patients are confused, disorientated, restless and anxious, especially at night; hallucinations sometimes appear, and while this excitement prevails it is only with partial success that one can gain their attention.

The primary agitation soon wears off and the most striking symptom is the memory defects; there is an inability to remember passing events, in spite of the retention of clear apprehension. Incidents of their early life and even events which have happened but a few moments before, are not remembered. They do not remember just having had a visitor or just finishing a meal, they forget just having related an incident, and are consequently enumerating over and over again the very same facts, asking the same questions, expressing similar desires several times during the same visit. The time element is especially defective; they

cannot tell whether an event occurred yesterday, a week ago, or a year ago. These gaps of memory are filled in with numerous fabrications; the patient relates with all frankness and in all detail journeys and visits he has recently made, while as a matter of fact the patient may not have been out of the hospital for several weeks.

If these obvious inconsistencies are pointed out to them they are apt to become very much irritated.

The emotional attitude is anxious, quarrelsome, irritable or indifferent.

Physically, beside the poly-neuritic disturbances, there is insomnia, loss of appetite and defective nutrition.

Diagnosis is to be based on: (a) the marked and characteristic disorders of memory; (b) the apparent lucidity, contrasting with the real disorientation; (c) the co-existing signs of poly-neuritis.

Prognosis—Most frequently there is complete recovery; some die from intercurrent complications and others pass into a chronic state tending towards dementia.

COURSE AND PROGNOSIS IN THE VARIOUS TYPES OF ALCOHOLIC INSANITY.

Delirium tremens, the period of duration is sometimes abnormally brief (several hours), and at other times abnormally long (a few weeks or even months). The usual course, as before stated, is from four to six days. Recovery is the rule; death may occur from exhaustion, epileptiform attack or from some complication, namely pneumonia. About 3 per cent recover with some mental impairment. *Alcoholic delusional insanity* may be acute or sub-acute. When acute the course varies from two to three weeks, with symptoms rapidly disappearing perhaps during a night. In the sub-acute form the symptoms may remain from one to eight months, with numerous remissions, disappearing gradually. Hallucinations other than hearing appearing with expansive delusions generally indicate a prolonged course. The prognosis is usually favorable, only a few cases failing to recover. These, like the unfavorable cases of delirium tremens, present some mental deterioration.

The course of *alcoholic paranoia* is usually progressive. The delusions seldom disappear permanently. The prognosis is therefore bad, although abstinence from alcohol in conjunction to confinement in an institution often produces improvement. This improvement is often only apparent, for when patients are allowed to return to home or former surroundings, they usually revert back to their former delusions and are apt to have aggressive attacks or to suicide.

The course in *alcoholic pseudoparesis* is usually prolonged, but not progressive. The more marked symptoms disappear within the course of a few months or even years, leaving the patient in a mild condition of dementia, with perhaps a few expansive delusions of paranoid type. Some few cases recover so as to return to their homes and to business.

The treatment in chronic alcoholism varies in different cases, but in a general way nearly always demands that the patient be committed to some institution or other place where he can be properly supervised and controlled, special efforts being made to regulate habits, induce sleep, promote nutrition, guard against complications and withdrawal of the alcohol.

THE DISEASE AND THE MAN.*

BY W. B. ST. JOHN, BRISTOL, TENN.

As a token of gratitude which art and science owe to eminent men, physicians have given the name of certain diseases to their discoverers, or the names of certain physicians who first gave an accurate description of them.

For new diseases new names must be found, and no better name could be used than that of the discoverer, not only because it is a homage, but for the reason that it imposes no doctrines or opinions.

Some pathologists hold that the title should signify the pathology.

When the immortal Jussieu classified plants he was careful not to change the

* Read before Tennessee State Medical Association, April, 1911.

name of those which had been known for ages by the same name.

The apple remained the apple.

Belladonna kept its appellation.

He allowed the hemlock of Socrates to keep its ancient title.

ADDISON.

The charming Trousseau gave to Dr. Thomas Addison, in obedience to a law of equity, the name of the disease which Addison had discovered. This was very just, because there are no rival claims of priority.

No one had even suspected the changes in the curious or unique organs affected, or the remarkable symptoms which denote this change during life.

Dr. Addison was an Englishman, practiced medicine in London during the middle part of the nineteenth century, got his degree in Edinburgh in 1815; was Dean of the Medical College connected with Guys Hospital; was eminent for his clinical teaching; was a fellow laborer of Bright.

Truly a very remarkable man.

Was a practical physician.

Had immense perceptive powers, being shrewd and sagacious above the average of men.

When he had a patient before him he looked him through and through, so that very few diseases could escape his penetrating glance.

He was unrivalled in his power for searching into the complex framework of the body and dragging the hidden malady to light.

He made no study of therapeutics.

Wrote no prescriptions.

Was a fine pathologist and spent most of his life in the post mortem room.

Was the first to appreciate that great discovery of Laennec and boldly put in practice all the principles of the celebrated Frenchman, and he soon became distinguished for his splendid diagnosis of chest affections.

He made many contributions to medical literature; was the first to announce that the inflammatory exudate in pneumonia took place in the air cells of the lungs, and

not into any supposed parenchyma of the organ.

He was the soul of honor. No man stood higher.

He was singularly free from jealousy or ill-will.

No word of disparagement passed his mouth against a professional brother.

Notwithstanding all these qualities, he was not popular, for he was cold, resolute and unapproachable.

For a number of years before his death he was not well.

Was inclined to melancholy.

Retired from his professional work at the age of 65.

Two years later, in 1860, he died of gall stones.

Dr. Addison had under his care a number of cases of a remarkable fatal form of anaemia, in which there had been no previous loss of blood, no diarrhoea of exhaustive nature, no chlorosis, no purpura, no renal, splenic, miasmatic or malignant disease, and, while searching for a cause for this anaemia, he stumbled—to use his own expression—on the connection between the symptoms and the lesion to what has since been known as *Morbus Addisoni*.

He was a very modest man; he called one form of this anameia idiopathic and the other bronzed disease.

In 1849 he made known to a medical society his views of this disease, but did not publish it until 1855.

For a long period of time a number of eminent physicians were incredulous and wrote numerous articles against the existence of the new disease, but all investigators have shown the accuracy and truthfulness of the original treatise.

Addison knew that tuberculosis was a cause of this disease, but did not know anything of the function of the suprarenals, and a half century has passed and our knowledge at present seems meager and it is only of recent date that we know anything at all.

We know each gland is composed of a cortex and a medulla, that this latter has an internal secretion which increases and

maintains the tone of the blood vessels, but that it does not act equally on all arteries.

What part the cortex plays is not known, that they have an important function is believed by the best physiologists.

A relation to the development of the generative organs has been suggested, on the ground that in cases of precocious sexuality the cortex of the supra renals has been found hypertrophied.

The resemblance between the cells of the cortex and those of the corpus luteum of the ovary has been observed.

Only recently has any new light been thrown on Addison's anaemia, and that by Dr. William Hunter, who spent fifteen years in the study of this disease, and his conclusion is that it is a definite, specific, infective, haemolytic disease, due in most instances to oral sepsis.

BRIGHT.

Twenty years before Addison published his memoir, Sir Richard Bright, another illustrious Englishman, made his name renowned in medical science in his original description of albuminous urine.

He was only 36 years of age when he published his treatise, which was in 1827, and it was entitled "to the connection that existed between dropsy and albuminous urine during life, with certain morbid structural conditions of the kidneys as found after death."

He was quite a contributor to medical literature, among the list is "Disease of the Arteries and the Brain," "Cases and Observations Illustrative of Renal Disease," "Observations on Jaundice and on Malignant Diseases of the Liver."

Bright was the son of a wealthy merchant and banker of Bristol, was a student of Drs. Hope, Munroe and Duncan in 1809, attended the lectures of Dr. Gregory in 1812, graduated in 1813, and wrote a thesis for this occasion on the contagion of erysipelas. And, by the way, he thought that there was an unusual predisposition to erysipelas in kidney disease.

He was quite a traveler, visited Iceland and wrote an account of it, took several

trips to Switzerland, Germany and Italy, was proficient in the German and French languages.

It was while acting assistant physician to Guys Hospital that he laid the foundation for his well-known discovery.

He was a man of considerable industry and unrivalled observation, and this one result of his labors will always be remembered wherever medicine and science exist.

His striking characteristics were devotion to truth, even temper, cheerful disposition, an extraordinary consideration towards the failings of others.

He was sincerely religious, both in doctrine and practice, and so pure in mind that he was never known to express a sentiment or relate an anecdote that was not fit to be heard by the merest child or the most refined female.

There was no man more honest, more pure, more sound in judgment, more warm-hearted and far-seeing.

He was a great believer in the efficacy of medicine and took large quantities of it himself; of one aperient it is said that he took a dose daily for three years.

He was afflicted with ossification of the aortic valves, but this was not definitely known until the autopsy, for he had a disinclination to allow any examination of his chest.

Along in December, 1858, he had an attack of hemorrhage of the bowels, attended with great prostration of strength and difficulty of breathing, assuming the form of angina pectoris, from which he died.

He was attended by Drs. Latham, Watson and Babbington.

His eminent position as the leading physician of the day, though slowly achieved, by his thoroughly practical writings and great discovery, was sustained by his amiable manners and his uniformly honorable conduct.

The influence of such a man as Bright upon the profession which he adorned could not be but good and beneficial.

He was a standing monument of honorable success, an example of reputation above all suspicion of unfairness in dealing.

His unquestioned eminence was a perpetual rebuke to the undeserving and an encouragement to those who, like himself, were more anxious for truth than for notoriety.

CORRIGAN.

Another comparatively common, interesting and curious disease, which bears the name of a doctor, is Corrigan's Disease, or Athlete's heart, with the water hammer pulse, which was first made public in 1832 by Sir Domineck John Corrigan, in a paper called "Permanent Patency of the Aortic Valve."

When physician to the Jervis Street Hospital, Dublin, he had at his disposal only six beds, yet, out of the meager material furnished by these, he extracted the facts set forth in his famous memoir, and he is said to have stated that from these six beds he drew the most valuable portion of his clinical knowledge.

When quite young Corrigan obtained an appointment to the Lay College of Maynooth as assistant to the professor of natural philosophy, and by his experiments, together with his practical knowledge of hydraulics and pneumatics, thus early acquired, developed his facility in demonstrating diseases of the blood vessels as illustrated by changes in circulation.

Corrigan wrote a paper on cirrhosis of the lung which anticipated much which has since been written on chronic interstitial pneumonia and fibroid phthisis.

In his practical observations on diagnosis and treatment of some functional derangements of the heart he calls attention to the fact that there is absence of the outward displacement of the apex beat.

A favorite maxim with him was: "Choose your own text-book of the practice of medicine and let your clinical record be the commentary to prove its accuracy or otherwise."

His favorite book is said to have been Morgagni.

He had the honor of Baronetcy conferred upon him by her Majesty, Queen of England, in 1866, at the same time Sir James

Y. Simpson received a similar honor for the discovery of chloroform.

He died in 1880, aged 70 years.

His name still lives.

MENIERE.

A strange disease we sometimes see which has for its characteristics some alarming symptoms, such as apoplectic attack, accompanied by tinnitus aurium, dizziness and vomiting, leading to loss of consciousness for a longer or shorter duration, was first described by Dr. Prosper Meniere in 1861, while he was in charge of a deaf and dumb asylum in Paris.

During a practice of many years he had met with a large number of patients who always presented the same symptoms, which symptoms often repeated themselves at intervals during weeks, months or even years, and, as a rule, ended with the complete destruction of hearing.

Dr. Meniere gave a very clear description of this disease.

Notwithstanding there has been a great deal of confusion in regard to it.

He especially stated that it occurs in subjects with a perfectly normal auditory apparatus.

That it is an acute exudation, or sudden hemorrhage into the labyrinth.

POTT.

The next character I wish to introduce to you is one to whom we are much indebted, namely, Dr. Pervical Pott.

First, he was the principal author of that simplicity which distinguishes our present practice from that of our ancestors.

Second, he introduced a rational and inductive application of rules of art to surgery and in the treatment generally of disease, and it was the object of his life to reduce its practice to the principles of the curative art and thus render the office of the surgeon one of refinement and humanity.

He gave the first description of the cancer of the scrotum, a disease peculiar to chimney-sweeps.

He gave the description of the mortification of toes and feet, which is called Pott's

Gangrene, and also the treatment which has proven most successful.

He was the discoverer of congenital hernia; he was the first who accurately described the descent of rupture through the crural ring, but he was not by any means infallible, he made a singular mistake, he did not believe that there were two openings in the abdominal muscle, to constitute the abdominal external and internal rings, and says that all descriptions of more than one on each side are not representations of nature, but are images of luxuriant fancy and have no foundation on truth; but Sir Astley Cooper's valuable commentaries and plates delineating this anatomy and Liston's accurate description of these parts have set these matters at rest and given Cheselden his just claim for accuracy.

Pott's views on the administration of cathartics in strangulated hernia include almost everything that recent investigation has tended to establish.

His diagnosis of bubonocoele in the female is very judicious. He says: 'Many a useful life has been lost by the real mischief not being known amongst modest women.'

His treatise on hydrocele gives a practical account of the disease and various modes of operating for its cure, also description of the injection method.

His observations on those injuries to which the head is liable from external violence display a knowledge of pathology greatly in advance of his day and is equal in sagacity to and worthy of the skill otherwise practiced by him.

This is considered the crowning effort of his life.

His treatise upon fistula in ano brought the treatment of that painful disease, the fruitful source of the empiric, to the state of simplicity in which it is practiced and for which he justly claimed the merit.

He made an investigation of the diseases of the vertebra at a time when this distressing malady had not attracted previous attention; the mode by which he traced the cause and effect is singular and accidental.

This is known as Pott's angular curvature, or Pott's disease.

It is wonderful how much this man accomplished when you think of the time in which he lived.

He was born in London in 1813, a time when the art of the surgeon was limited to almost a mechanical pursuit and forbidden to range in the speculation of pathology or in the treatment of disease, it being considered a sort of high treason for a surgeon to effect any knowledge of the theory or practice of medicine, or, under any circumstances, to prescribe for a bodily disease.

In surgical cases the physician only was permitted to prescribe for their ailments, to regard febrile symptoms, the state of the bowels or the pulse, and if the surgeon interfered he was censured and considered an empiric.

Pott was apprenticed to the eminent Dr. Nourse, a surgeon of St. Bartholomews. He began practicing at the age of 23; at 30 years of age was assistant surgeon, and four years later chief surgeon of St. Bartholomews, and while in this position he taught the celebrated John Hunter.

Pott when 40 years of age fell from a horse and broke his leg. It was during this confinement that he wrote on fractures and dislocations and fistula lacrymalis.

Rather a singular thing happened about this fracture.

At a consultation of the surgeons it was agreed to amputate. Pott submitted, the instruments were actually got ready, but Dr. Nourse, Pott's preceptor, arrived about this time and said no—Pott got well.

It probably would not have ended so happily if the bone had not made its exit at a distance from the fracture, so that when it was returned into its proper place a sort of valve was formed which excluded the air.

This may have been the origin of the button-hole incision in cold abscess.

Pott said that he began to practice when he had much to learn, but he was not actuated by that opinative wisdom that sometimes attends advanced life.

After all his study and experience he confessed that he still retained a large list of inquirenda.

He enjoyed good health at the age of 70.

He, however, contracted a cold in December, 1888, went to bed with shivering and fever and became delirious.

He was sanguine of recovery for several days, but on the seventh day he said: "My lamp is almost extinguished. I hope it has burned for the benefit of others."

He was attended in this illness by Heberden.

PARKINSON.

The discoverer of the shaking palsy was a queer character. James Parkinson, a pupil of John Hunter in 1785. He was a surgeon and palaeontologist.

He was the author of the "Organic Remains of a Former World," which was published in 1804.

This was the first attempt to give a scientific account accompanied by figures of fossils.

He wrote also "The Chemical Pocket-book" and "Observations of the Excessive Indulgence of Children," but his greatest production and the one for which he will always be remembered was an essay on shaking palsy, which appeared in 1817.

While the style of this is unadorned, it is so clear, terse and exact that it is difficult to improve upon it. He defines the disease thus: "Involuntary, tremulous motion, with lessened muscular power in parts not in action and even when supported; with propensity to bend the trunk forwards and to pass from a walking to a running pace; the senses and intellect being unimpaired."

He was thought to have been connected with the, so-called, Pop Gun plot to assassinate George III in the theater, by means of a poisoned dart.

HODGKINS.

The history of Dr. Thomas Hodgkins, the man who described the disease we are accustomed to call Hodgkins Disease, is very interesting and pathetic.

He had quite a struggle, was a seven-months' child, always feeble; was born in London about the time of the French Revolution.

Notwithstanding his feebleness he ac-

quired quite a knowledge of Greek, French, Latin and Italian.

He got his degree in medicine in Edinburgh in 1823, was made Curator of the museum, inspector of the dead and professor of morbid anatomy at Guys Hospital.

To have occupied such a position he must have possessed not only strict anatomical knowledge, but an amount of special, scientific and general information that few men attain.

His classified catalogue of the pathological museum of Guys Hospital is a masterpiece of talent and industry.

He was a naturalist and a philanthropist.

His love of nature was such that there was scarcely a department of natural history that he did not cultivate.

In spite of the prejudice raised in some minds by his dress and opinions, which were those of a Quaker, Dr. Hodgkins' genius and professional knowledge made his way.

Among the contributions which he made to medical literature are some works which bear a strong mark of honest toil and intellectual vigor.

Such as "Lectures on Morbid Anatomy of the Serous and Mucous Membrane," and "On the Influence of Physical Agents on Life," but the one we are most indebted to him for is entitled "Some Morbid Appearances of the Absorbent Gland and Spleen," which he read before the Medico Chirurgical Society on January 12 and 24, 1832.

Although possessing the entire confidence of those who knew his worth, Dr. Hodgkins never obtained a large share of practice, had no idea of money and cared nothing for its accumulation, did himself and others an injustice in his disregard of due professional remuneration.

He was a little eccentric; it was difficult to make him take the fees that he had earned.

He was an enthusiastic lover of his profession; most unselfishly, most earnestly he labored for its advancement.

Some of his friends set on foot a subscription for a testimonial to him which soon amounted to a considerable sum, but he would not accept this in any form.

He seems to have foreseen the cause of his death. He maintained for years that the sigmoid flexure of his colon was diseased, and he was a great sufferer from this trouble.

His most important works were written under much suffering, according to his usual custom, between 6 and 8 in the morning, while reclining in bed.

The latter part of his life was devoted to philanthropic labors.

It was while engaged in a journey to the Holy Land, for the purpose of aiding in the relief of the Jews, that he was seized, while at Jaffa, with the dysentery, from which he died, aged 68.

In the world of science he will always be regarded as one of the pioneers of pathology.

Among men of all nations and all callings, wherever his name has become known, it will be received and treasured in remembrance as the name of one who loved his fellow man.

GRAVES.

Robert James Graves, an Irishman, born in 1800 and died in 1853 of disease of the liver.

He was professor of internal medicine in the School of Physicians, Trinity College, Dublin.

Was a most excellent teacher and keen observer.

He was the first who distinctly described exophthalmic goitre and gave the three cardinal symptoms. This was in 1835. Basedow, in 1840, described what he termed exophthalmic cachexia.

Graves had only three cases of this malady from which he gained the knowledge of its classical symptoms sufficient to describe it as a distinct entity. He was investigating the effect of normal catamenia on the thyroid when he ran across, as it were, the peculiar symptoms belonging to exophthalmic goitre.

He made an observation which was perfectly correct, and still holds good, but too often overlooked, and that was in reference to the enlargement of the thyroid.

He said, in his original lecture on this subject, that the enlargement deserves the name of hypertrophy, and it is at once distinguishable from bronchocele by its becoming stationary just at the period of its development, when the growth of the latter begins to be accelerated. In fact, although the tumor is observable when attention is directed to it, yet it never amounts to actual deformity.

It was not until 1860 that Graves was duly recognized as the discoverer of this disease, and this was done by Professor Armand Trousseau, the great French clinician, who was an enthusiastic admirer of Graves.

He said, in speaking of Graves: "Of all the practical works published in our time, I am acquainted with none more useful and more intellectual; I have incessantly read and reread his lectures and have become inspired with them in my teaching, and have endeavored to imitate them in the book I published.

Graves' original physiological work entitles him to a high position among scientific discoverers, but, independently of it, he ranks as one of the greatest physicians of any century.

With the treatment of fever his name will always be associated.

He supplied his patients liberally with food and stimulants; insisted upon them taking nourishment, whether they desired it or not.

You are not, he said, to permit your patient to encounter the terrible consequences of starvation because he does not ask for nourishment.

It is said of Graves that one day while visiting the convalescent ward, he remarked on the healthy and fine appearance of those who had recovered from the fever; turning to the class he said, this is all the effect of our good feeding, adding, that, when I am gone you may be at a loss for me an epitaph, let me give you one; "*He fed fever.*"

BELL.

In only one instance do we have a disease named for an anatomist, and that is Bell's Palsy.

The discovery of this disease was an accident.

The credit is due Sir Charles Bell, a Scotchman by birth, a distinguished anatomist and a gifted draughtsman.

This artistic talent he well demonstrated while at the battle of Waterloo, where he made some bold and forceful water color sketches of the more serious and painfully instructive injuries.

In these drawings there is a large and vigorous representation of the figure as well as the wound.

Bell's father was an Episcopal clergyman.

It seems that he at some time experienced great relief at the hands of a surgeon, and, to testify his gratitude, bequeathed his two sons, John and Charles, to the medical profession.

They were an honor to the profession and, as anatomists, no country has produced their superior.

The text-book written by John and Charles Bell was not only the best on anatomy at that time, but, in the opinion of many, is still the most practical treatise on human anatomy in the English language.

Charles Bell was the first to recognize that the optic nerve transmitted only impressions connected with the sight; the olfactory only with smell; the auditory only with hearing, and the gustatory only with taste.

His second great discovery, in 1808, was the recognition of the respiratory system of nerves. He also established the fact that the function of the anterior roots of the spinal cord is motor, and that of the posterior roots sensory.

He was the first to demonstrate the compressor urethra muscle, also made the first dissection to show the internal sphincter of the bladder and the muscular band of the trigone which unites the ureter to the internal sphincter, known as Bell's muscle.

He is said to have been a very happy man and enjoyed life.

His ideal was John Hunter.

With the exception of a few others, the French have only two representatives in

medical nomenclature, namely Raynaud and Landry.

LANDRY.

What we can glean of the history of Jean Babbista Octava Landry is very meager.

He graduated in 1854 at the Paris School. Only lived about ten years after graduation. Dying of cholera at the age of 39.

During that short period he accomplished a great amount of original work. Among the most celebrated was the discovery of ascending paralysis in 1859, which renders his name and fame permanent.

RAYNAUD.

Maurice Raynaud was a physician, a scholar, a philosopher and a man of letters.

A happy combination for the perfection of a character, and yet his history is truly pathetic.

He was probably the most brilliant physician of his time, and in that short period of his life did as much, if not more than, any other man in original work.

As one of his eulogists has said: "We might easily picture Maurice Raynaud in the rich sixteenth century, when Erasmus flourished, when the scholar did not specialize, but, on the contrary, generalized, when in France they spoke in the Sorbonne of the Latin of Cicero, more frequently than the French of Rebelais."

From the beginning of his medical career he prepared himself for a great purpose, and his intense love and pursuit of knowledge so broadened, enriched and expanded his mind, as he climbed step by step to his goal, that he reckoned neither with labor or patience, but gave lavishly of himself to his work, the work so ruthlessly cut short by his sudden death.

In his book, "Physicians at the Time of Moliere," he placed himself on a parallel with the condition of medical science of that period, and he made it clear that medicine was hesitating between Galenism, although modified but still triumphing and ruling, and contemporary discoveries, the most important of which was the circulation of the blood, which opened the age henceforth lim-

itless, the experimental methods, the spirit of analysis and free discussion.

We see him first hospital interne, ardent worker, searcher, innovator by instinct, but he had ever in view the school and the education.

It was the aim of his life, his most ardent desire.

Next the professor of internal pathology.

He soon became distinguished: the gold medal of the hospital, the gold medal of the faculty were awarded him, and he closed the fruitage of his medical life in 1862 with a thesis, still celebrated as a classic, in which he gave the first description of the disease which bears his name, Local Asphyxia, with Symmetrical Gangrene of the Extremities.

We must admire such resource of mind, such versatility of knowledge, the combination of all those intellectual gifts which make the scholar and the professor. How much more the traits which make a true man, sincerity, love of work, generosity and devotion, with such instinctive qualities of the heart, joined to the most brilliant and scholarly mind.

Life was to him a question of faith and duty, and the question which he asked himself always was whether he had done all that he should do.

He was to have represented his Faculty of French Medicine in London and had prepared his address on "Septicaemia." Justly chosen for this post, his friends were justly confident of his success.

Happier than usual, he came home and joyfully romped with his little children, kissed them good night, and three hours later they were orphans.

In that short space all was at an end.

Constant worker, untiring devotion to his patients and his friends, and this devotion he carried everywhere, in literary questions as well as in science and religion.

We all know how strenuous and severe the life of a physician is, even the most fortunate, but none knew the weight of work better than that dauntless spirit Raynaud.

He was not deceived at the first approach of death. Firm in his faith, wish-

ing to die as he had lived, he sent first for a clergyman and then a physician.

Perceiving the fatal moment, in spite of the terrible grief of separation from those he loved, he was calm in spirit, clear in understanding and absolutely gentle.

In the midst of his brilliant career, in the prime of life, he was thus suddenly taken, but he left an unblemished reputation and an imperishable name in medicine.

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CHRONIC INDIGESTION.

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I am going to make a statement which I wish was original. There is no such thing as chronic indigestion, and in nine cases out of ten the stomach is absolutely normal and the functional disorder of the organ is reflex in character. The stomach acts as a danger signal for the whole system. Upon the appearance of any disease the stomach becomes disordered, which, in most cases, is the first symptom of a constitutional disease. Many of the acute diseases first make their presence known by a disordered stomach. In conditions of this kind we do not diagnose the disease gastritis and attempt to cure the stomach symptoms; far from it,

we put the patient on a diet that will not add fuel to the fire and at the same time attempt to overcome the disease that is causing the toxæmia. This same danger signal is found just as often in chronic conditions as in acute, but unfortunately it is not always recognized and the disordered stomach is frequently treated as a disease and not as a symptom.

When a patient comes to us with chronic indigestion our first duty should be to eliminate ulcer, either gastric or duodenal, and cancer. A careful history of the case, in conjunction with the symptoms, is of the utmost importance, as the physical signs are sometimes negative and the test meal can be regarded only as an aid in diagnosis, and care must be taken not to lay too much stress on this feature. In ulcer it is well to remember that hemorrhage is a symptom that is often lacking, but what is of more importance is the relation of pain to the time of partaking of food. In duodenal ulcer the pain comes on from two to four hours after eating, and this pain, in many instances, can be relieved by the taking of food. In fact, many patients with duodenal ulcer, when they begin to suffer with what they call a hunger pain, take for its relief some article of food. This one symptom is of great value in making a diagnosis of duodenal ulcer. In gastric ulcer, on the other hand, food exaggerates the pain, which comes on a short time after eating. Cancer is generally found in those cases which give an ulcer history of many years' standing. The test meal should always be used, but it should neither confirm nor deny the presence of ulcer, but should be used as a slight aid in diagnosis in conjunction with the more important clinical symptoms. The examination of a fasting stomach, according to Herschell, will frequently reveal more valuable information than the test meal. If the stomach is empty after an interval of twelve hours, we are justified in concluding (1) that there is no considerable motor insufficiency, thus excluding pyloric or duodenal stenosis. (2) That there is no permanent hypersecretion of gastric juice, thus,

in all probability, excluding gastric and duodenal ulcers as well as cancer.

The test meal is of more value in the diagnosis of cancer than of ulcer. It is most suspicious of malignancy to find a case of many years' duration in which the test meal shows the *boas oppler bacillus* with lactic acid and absence of hydrochloric. It is not my purpose to attempt to give you a differential diagnosis, but simply to call to your attention the fact that cancer or ulcer is found in about one case in ten of those patients complaining of chronic indigestion, and should be eliminated or confirmed before proceeding with the examination. No condition requires a more thorough physical examination than chronic indigestion. Many of these cases are due to an organic disease of the heart or kidney, yet the unsuspecting patient attributes all of his trouble to the stomach. Every man here has seen cases of so-called nervous indigestion. They usually give a history of overwork or of having gone through some severe mental ordeal. They have well marked nervous symptoms, and, as a rule, are given to spells of despondency. Every organ in the body is only partially performing its duty; the blood is low in hæmaglobin and the secretions are not at all active. The usual treatment for this condition is the stomach tube, starvation diet, some digestive mixture, the result of which, as a rule, is a dismal failure. It is not the stomach here that needs medication, but the whole system, which is below par. These patients should be placed in cheerful surroundings, every effort should be made to keep their minds off of themselves, they should be given a liberal diet in order that they may regain their lost strength. Iron or arsenic is often indicated to enrich the impoverished blood, and last, but not least, medication to the already overworked stomach is contra-indicated.

Cirrhosis of the liver or some portal obstruction, also abdominal tumors causing pressure, should invariably be considered in making a diagnosis. I have seen cases of chronic indigestion relieved by the alleviation of a chronic constipation, others by attention to the teeth.

An interesting case was referred to me last winter with the diagnosis of gastric ulcer. The patient being a nun, physical examination had never been made, but the history and symptoms were typical of ulcer, and the test meal showed a marked increase in hydrochloric acid. I sent her to the hospital for examination and operation, if necessary. When the abdomen was exposed on examination a tumor was seen extending from umbilicus to pubis. Digital examination proved it to be a fibroid tumor. The next day I performed a hysterectomy, and from that day to this the patient has never had a stomach symptom. She eats any and everything, and has gained twenty-five pounds in weight. This case well illustrates the importance of a thorough physical examination in all cases of chronic indigestion and also the fallacy of test meals. Chronic appendicitis is a frequent cause of chronic indigestion. I have had a number of cases that presented the usual dyspeptic symptoms, with an occasional slight attack of pain and soreness in the right iliac fossa. One of the most frequent sources of error in diagnosis is diseases of the gall bladder or ducts. We must remember that gall stones are a chronic condition, that it takes a number of years for the typical symptoms, such as colic, jaundice, pain in right shoulder, etc., to develop. Before these symptoms appear, however, they make their presence known by signs that are quite significant. These are dyspeptic symptoms, sour stomach, and what is quite suspicious is a feeling of distention in the upper abdomen. There is usually a slight pain in the epigastrium. Sometimes it is over the gall bladder. In a number of cases I have seen the pain limited to an area about one inch to the right of sternum, commencing below nipple and extending to lower border of ribs and covering an area about the width of the hand.

The following case of gall stones is both interesting and instructive. Mr. J. W. C., age 38, occupation. paying teller in a bank. He had the usual diseases of childhood, typhoid in 1896 and malaria nearly every summer for past twelve years. In 1896 in-

digestion first became apparent, which has continued up to the present year. He had a gnawing pain in stomach, which came on after food and was associated with a sense of distention in epigastrium and lower right anterior thoracic region. This pain was not referred. He was quite nervous, of a bilious temperament and always eructated a sour fluid after eating. He had been using the stomach tube every night for twelve years, which gave him considerable relief for the time being. There was no history of biliary colic or of the vomiting of blood. He had tried every patent medicine that was recommended to him, and had been under the treatment of many physicians. Three years ago, on account of his nervous condition and dyspepsia, he was compelled to stop work for twelve months. He had felt, on several occasions, some pain and tenderness over appendix, and had been advised to have same removed. He was last treated by Dr. Owen Wilson, of Nashville, who realized the surgical importance of the case, and kindly referred the patient to me. On examination I found a tenderness on deep inspiration over gall bladder and some slight tenderness over appendix. There was a tender spot one inch to right of twelfth dorsal vertebra, which is quite significant of gall bladder trouble. The blood and urine showed nothing of importance. A test meal was given and withdrawn at the end of an hour and the organ inflated. The stomach showed no dilatation and no food remnants of the meal of the preceding night were discovered, which eliminated stagnation. An examination of the test meal showed a normal amount of hydrochloric acid, no lactic acid and no blood. A diagnosis of gall stones, with a possible inflammation of the appendix was made and an operation advised, to which the patient consented. I made an incision through the right rectus, in order that both the appendix and gall bladder might be reached. There were seven stones found in the gall bladder and one in the cystic duct, the appendix looked suspicious and was also removed. The operation was performed the 12th of June, and from that time to the present the patient

has gained thirty-six pounds in weight, he eats everything without discomfort, the chronic constipation has disappeared, and he has given away his stomach tube after using it for twelve years. The diagnosis in this case was made on the following symptoms: A history of chronic indigestion, following typhoid fever, the situation of the pain in the stomach associated with a feeling of distention, the localized tenderness over the gall bladder and appendix and the tender spot opposite the twelfth dorsal vertebra.

I do not care to leave the impression that all cases of chronic indigestion are of a

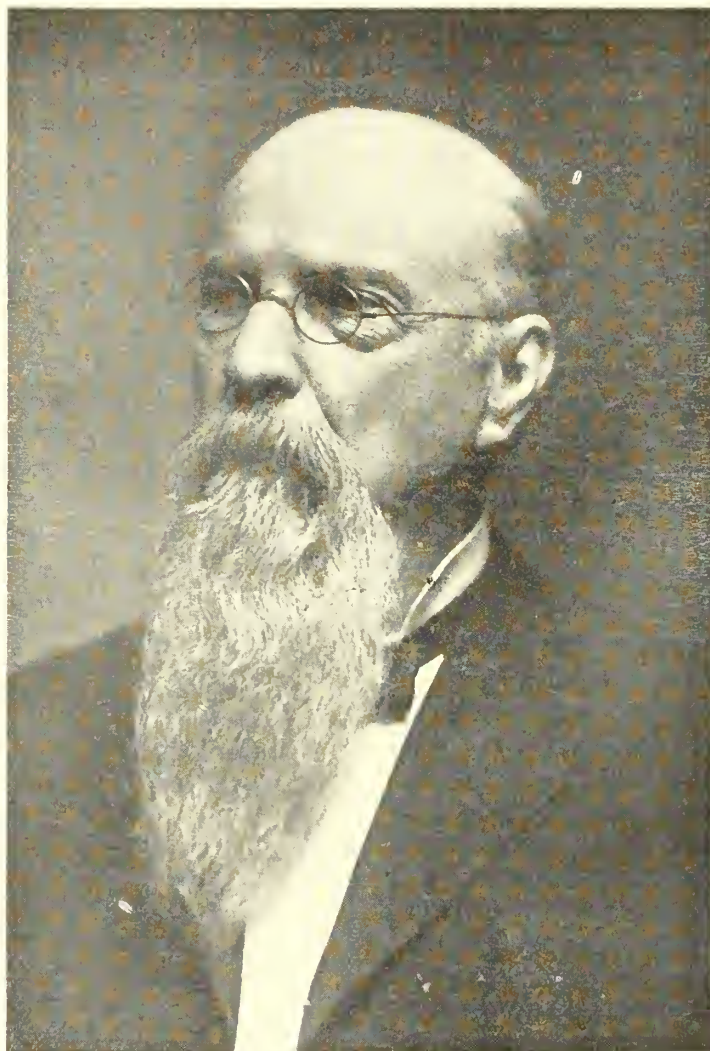
surgical nature, for such is not the case, but desire, in conclusion, to emphasize the following points which I believe are of importance:

First, that chronic indigestion is not a disease, but a symptom of disease.

Second, that if ulcer and cancer can be eliminated, then the stomach is normal and the disordered condition of the organ is reflex in character.

Third, that to make a correct diagnosis it is absolutely essential to get a most accurate history, a thorough physical examination of patient, including blood, urine and stomach contents.

DR. WILLIAM A. ATCHISON



HE subject of this sketch was born in Warren County, Kentucky, on August 17, 1831, and died at Nashville, Tennessee, on December 18, 1911, in the 81st year of his age. For a number of years he had been troubled with a mild grade of arterio-sclerosis complicating a valvular heart lesion, but only within the recent past was there any noticeable impairment of his general health. Some three months

ago he began to suffer with attacks of pain in the left chest, accompanied by embarrassed breathing, which he attributed to indigestion, but which proved upon examination, to be of cardiac origin. He was at once frankly advised as to the true nature of the trouble, and accepted the verdict calmly, continuing with perfect equanimity in the even tenor of his way until the call came. His mind remained clear, his carriage erect and vigorous, and his interest in life alert and earnest until the very end, death overtaking him while seated in his accustomed chair reading his morning mail.

Doctor Atchison graduated in medicine from the University of Louisville about 1852, and at once began to practice in his home county, removing to Bowling Green, Kentucky, a few years later. He was a successful physician from the start, and rapidly built up a large and desirable clientele. On January 1, 1875, he removed to Nashville, and formed a partnership with his uncle, Doctor T. A. Atchison. For the following twenty years the firm of Doctors T. A. and W. A. Atchison stood at the forefront of the medical life of this city, both in popularity and in high character of professional work.

Doctor Atchison loved his profession, and retained an active interest in it to the last. He was a faithful reader of medical journals, and kept his library up to date in the department of general medicine, to which his practice was limited. At the bedside he was one of the most resourceful men the writer ever knew. His therapeutic armamentarium seemed inexhaustible. He never abandoned hope nor acknowledged defeat so long as a patient continued to breathe.

Doctor Atchison also loved his professional brethren, and seldom lost an opportunity to attend medical gatherings. He was President of the Kentucky State Medical Association while still a young man, and was the third President of the Nashville Academy of Medicine, serving for the year 1888-9. During the whole of his life in the state he was a member of the Tennessee State Medical Association.

As citizen, as friend, and as Christian gentleman, as well as in the capacity of physician, Doctor Atchison measured up to the highest standard. A man of unswerving integrity, firm in his convictions on all subjects, as strong men are and should be, conscientious, charitable, God-fearing—what more need be said of him? For thirty-six years of his active and useful life a familiar figure in the community which he early came to regard as home, loved most by those who knew him best, and honored by all, he will be missed from his daily walk of service to his fellowmen, and deeply mourned by many to whom he was counselor, benefactor, friend, and physician all in one.

Doctor Atchison's wife died in February, and his only daughter in July, 1911, thus leaving him entirely alone. Necessarily he was lonely in spite of the loving interest of numerous friends. The reunion with his family to which he looked forward with longing and in perfect faith came within the short space of ten months. Who shall say that it is not better so?

A. B. COOKE.

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EDITORIALS**THE PHYSICIAN'S DUTY.**

It is with pleasure we reproduce the following editorial from the pen of Dr. A. B. Cooke, of Nashville, which appeared in the *Southern Medical Journal*, February, 1910, and we respectfully call the attention of our readers to this editorial and then to the editorial, "What They Are Doing in North Carolina." We would respectfully suggest that you read again the editorial appearing in our last issue on "Venereal Prophylaxis or Social Hygiene," and see if you cannot be awakened to do something in the cause of public health.

"The proper attitude of the physician toward the great duties and responsibilities of citizenship is a many-sided problem, the solution of which does not appear upon the surface. Is there any sufficient reason why he should be considered, or consider himself, in a separate class from other men with reference to the obligations of everyday life? We think not. And yet something may be said in defense, or rather in explanation, of the course he has so long pursued, and which is coming more and more to be criticised and condemned.

"The word duty is as big and sacred to the true physician as to any other man. But his interpretation of it may be—in the nature of the case, often must be—gauged by a different standard. To no other class of men, for instance, are presented the intimate confidences of individual and family life which, with the physician, constitute a part of each day's routine. Health, happiness, life itself, lie at the heart of the issues that go to make up the sum of his professional existence. However broad his interest and however clear his understanding,

there is some reason why the problems which seem to him the most important and the most imperative should be those relating to his 'cases'—not to society in general. And from the viewpoint of those 'cases' it is well that it should be so. A critical public soon learns to look with distrust upon the physician who concerns himself to any extent with politics, sport or other extraneous pursuit.

"But, conceding that his first duty is to his patients, should the physician voluntarily permit his whole field of vision and his entire range of activity to be contracted to the case or cases in hand? Is it necessary or advisable that he should do so? We would not even intimate that any patient needing his services should be neglected; but we would strongly and earnestly assert that no physician's full duty is comprehended in the work by which he earns his daily bread. He lives under the protection of law and participates in the privileges of a Christian civilization; and from him no less than from other men are due solemn obligations to nation, State and municipality upon the maintenance of which the perpetuation of those benefits depends. Recognized or not, such obligations exist. Divested of their fallacies, there are no arguments to uphold the medical man in an attitude of evasion and inertia by reason of which his neighbor must bear the double burden or the welfare of the government itself suffer. And the pity of it is that this supineness upon the part of our profession, conspicuous now as in the past, is one of the factors which has contributed to the perversion of law and the demoralization of politics.

"It is no excuse for the physician to plead the exactions of his practice as a reason for failure to exercise his suffrage or to manifest a becoming concern in the proper administration of public affairs. The lawyer is engaged with his clients, the pastor with his flock, the merchant with the details of his business; yet to no one of these as a class can it be charged that he habitually ignores the call of civic duty and the opportunities of enlightened citizenship.

"These are general truths, so patent and self-evident as to be beyond dispute. But there are certain special considerations which should appeal even more forcibly to the dormant conscience of the profession. Admittedly, the fundamental condition of all social and material prosperity is the health and vigor of the people. An awakening public is already beginning to realize this truth and to demand that its paramount importance be recognized in the making and enforcement of law. Leadership is required—intelligent, aggressive leadership which the physician alone is fitted to supply. The problems of disease have in large measure been solved—in theory. But people continue to suffer and die from preventable causes. It is hard to understand how a conscientious physician can be content to confine his knowledge and effort to individuals when he knows that the helpless masses are crying aloud for succor.

"The present-day agitation in health matters is the most remarkable in the world's history. Never before has popular interest been so deeply aroused, and never before has the need of competent leaders been so apparent. This need the medical profession must meet or fall short of the full measure of its usefulness. To insure the results which should follow a movement so widespread and so earnest, the forces at work must be wisely directed; also they cannot fail to be wasted in fruitless effort. Whether the methods to be employed be purely educational, or seek the aid of legal enactment, the services which the physician is qualified by training and experience to render are indispensable. Almost without exception, he possesses the confidence of his community in a special and peculiar degree, and, whether he elects to exert his influence in a public or strictly private way, he has a power to create popular sentiment and crystallize it which is given to no other class of men.

"Without specific mention, it may be impressed upon the physician of the South that issues of inestimable importance to the welfare of his section and the nation at

large are developing and multiplying from day to day. The opportunities are great, the needs are urgent, and the cause is incomparably worthy. What policy will he—will *you*—adopt with reference to them?

"Interpreted in the light of the requirements of Christian citizenship, to be a physician involves something more than the ability to diagnose and treat disease. The broad-minded, big-hearted physician of the twentieth century, his talents dedicated to a life of service, cannot refuse to recognize the larger obligations of his calling and cheerfully and gladly assume his portion of the burden they entail."—A. B. C.

ORGANIZATION.

Only by thorough organization can the physicians of this State hope to accomplish the many things remaining for them to do. You have received bountifully from the efforts of your predecessors in medicine and are today enjoying privileges which they accomplished by much sacrifice upon their part. Is it not your duty to give your successors some evidence of your appreciation of the advantage you have enjoyed?

Your county society is the unit, and your first duty to organized medicine is to join your local society, and, if your county has no society, then get busy and organize one; if this be impossible, then affiliate with the adjoining county society; this entitles you to membership in the State and National organizations. Without these nothing could be accomplished. We know from what has already been done that through these influences much may yet be looked for. Doctor, it is your duty to the profession to lend your influence and your assistance to the cause.

Dr. J. N. McCormack, of Bowling Green, Ky., National Organizer of the American Medical Association, will visit the following cities during January and February in the interest of organization. Knoxville. Maryville, Elizabethton, Bristol, Newport, Rogersville, Covington, Martin, Humboldt, Dyersburg, Erwin, McKenzie. He has something to tell you, and from his past record

we know "he will deliver the message to Garcia." Our next meeting, to be held in Chattanooga, April 9, 10 and 11, 1912, promises to be the best in the history of the State society. Isn't it possible to report every county organized for 1912 and every member working for all?

WHAT THEY ARE DOING IN NORTH CAROLINA.

In response to a letter to the physicians of the State, sent out by the State Board of Health of North Carolina, hundreds of signed pledges to do concerted public health work are now being received by the State Health Officer, Dr. Rankin.

The plan, briefly stated, has been to secure from approximately one-fourth of the medical profession of the State a statement of what they considered a reasonable service that each physician should render to his community in the interest of its general health. From these many different replies a statement was deduced showing what appeared to the average physician to be a reasonable service to be expected from each physician in the State in the interest of the public health in his community. This statement was then published in the form of a "Physicians' Pledge of Concerted Work." These are the pledges that are now being signed and returned by the hundreds.

The real significance of this pledge is best seen when we consider that the signee agrees to deliver, or have delivered, a lecture on public health or sanitation in his community each year; to use his influence in securing the distribution of literature on consumption, hookworm disease, typhoid fever, malaria, etc., as issued free by the State Board of Health, among his clientele; to persuade them to be law-abiding with respect to public health laws, and to call attention to defects in such laws and propose suitable remedies for these defects.

One or two of our societies in Tennessee and a few individual physicians are doing educational work of the sort proposed in the above plan. Why not all?

LEAVING HIS STING WITH US.

In the Nashville Democrat of Wednesday, December 27th, Mr. Biggers, the famous cartoonist, depicted the departing year, 1911, as Father Time standing in a doorway, marked "Exit," and upon the blade of his scythe was Bill, Bill, Bill. He intended this as a more or less practical pun upon our national Christmas spirit, or as a reminder of what the departing year had left us.

In the same issue, upon page seven, we are informed that President Taft lifts the ban against Mental Science Healers in the Panama Canal Zone. The original order prohibited anyone engaging in the practice of medicine without a license, a penalty being provided for violators of this law. We are told that the issuance of this order aroused a storm of protest from the Christian Scientists, as a result of which the President issued the following amendment:

"Section 3. Any person shall be regarded as practicing medicine within the meaning of this order who shall prescribe for, operate on, or in any wise attempt to heal, cure or alleviate, or who shall in any wise treat any disease or any physical or mental ailment of another; provided that nothing in this order shall be construed to prohibit (a) the practice of the religious tenets of any church in the administration to the sick or suffering by mental or spiritual means without the use of any drug or material remedy, whether gratuitously or for compensation, provided that such sanitary laws, orders, rules and regulations as now are, or hereafter may be, in force in said canal zone are complied with; or (b) gratuitous services in cases of emergency; or (c) the administering of ordinary household remedies."

If we could change the meaning of Mr. Biggers' cartoon and fit it to the above endorsement of an unchristian and unscientific cult, we would also exclaim, Bill! Bill! Bill! When father time has called the President into the great beyond, this stigma will remain upon the name he leaves behind, and his sting will still be with us.

Has the President so soon forgotten that

the application of scientific medical knowledge alone made possible the building of the canal, the greatest single achievement in the history of man. Shame on you, Bill! Bill!! Bill!!!

Help your County Health Officer and the State Board of Health by reporting promptly each month.

Nearly six hundred cases of hookworm disease have been treated in the free dispensaries established by five counties in Tennessee in the last sixty days. About half of these cases have applied for second treatment, and many of them for the third, thus insuring the permanent relief of a large number. The bad weather has hindered the work of the dispensaries very markedly, but the showing so far made is very gratifying.

A very important part of the work now being done for the eradication of hookworm disease by the State Board of Health is the making of sanitary surveys in each county in which the representatives of the board are at work. These surveys are made by the inspection of at least two hundred rural homes in each county and the inspection of all the school-houses and grounds. It has been found in the surveys already completed that considerably less than six per cent of the rural homes have any closet at all, and that a smaller per cent of the schools have outhouses. In one county considerably more than two hundred rural homes were inspected without a single closet being found. Of course, this condition of affairs contributes largely to the prevalence of hookworm disease, typhoid fever, diarrheas and other diseases. It is gratifying to note that many sanitary closets are being built by farmers and others, and the Boards of Education in six counties have taken action that insures the building of sanitary closets in all the schools. The physicians can be of great help in this movement for improved sanitation in the rural districts of the State. It ought to be

and is a part of their duty to advise their clientele of the advantage of having facilities for the prevention of soil pollution.

Dr. George R. White, the State Live Stock Inspector, a member of the Nashville Academy of Medicine, is doing a fine work in bringing the attention of the people to the necessity of the proper inspection of milk and meat. Dr. White has delivered nearly a hundred lectures on the subject of "Milk and Meat Inspection and Diseases Transmitted From Animal to Man" at public gatherings in all parts of the State. His department is devoting especial attention to the eradication of tuberculosis from the dairy herds, and is meeting with most gratifying co-operation upon the part of the dairymen and farmers.

The State Department of Agriculture is doing everything in its power to help the State Board of Health in their campaign against communicable diseases in Tennessee. A place on the program is given to a representative of the State Board of Health at all the farmers' meetings. More than two hundred addresses have been delivered to gatherings of farmers by public health men in the State in the last three months, and it is believed that a sentiment for better sanitation is being grown as a result of their work.

DEATHS

Willie Doyle, the 14-year-old son of Dr. and Mrs. A. N. Doyle, of Centreville, Tennessee, was found dead December 12, near his parents' home at Bon Aqua, shot through the abdomen with a double-barreled shotgun. The boy went hunting the afternoon before, and upon his failure to return at nightfall his parents became alarmed and a searching party was organized, which spent the night looking for the boy. They were unsuccessful. From marks on the fence it is supposed that he attempted to climb a fence with gun in hand when it was accidentally discharged and the load of one

barrel entered his abdomen. Dr. Doyle is a prominent physician of Bon Aqua.

Dr. William H. Willett, an aged and prominent citizen of Adams, Tennessee, died at Nashville, Tennessee, in a local infirmary, December 13, after an illness of several months. Dr. Willett was 70 years of age, a resident of Robertson County, where for almost twenty years he was one of the county's most prominent physicians and highly respected citizens. The remains were shipped to his home at Adams, where the interment took place. Dr. Willett is survived by his wife and three children. He was a member of the Robertson County Medical Society and the Tennessee State Medical Association.

NEWS NOTES AND COMMENT

Dr. Joseph N. McCormack, the fearless and able champion of organized medicine throughout the entire Union, will devote two weeks to Tennessee in the near future, and we trust the profession will accord him the welcome and assistance to which he is so justly entitled. We are informed that Dr. McCormack will soon retire from this field of work, and the Council on Health and Public Instruction will place a number of speakers in the field through their Speakers' Bureau. We regret to learn that Dr. McCormack will retire, but trust the plan of the council may prove an incentive in awakening the profession to the importance of matters pertaining to Public Health and Public Instruction.

Much interest is being shown in the coming meeting at Chattanooga, April 9, 10 and 11, 1912. Make your arrangements to attend. The Committee on Scientific Work promises the best program in the history of the organization.

The Commission of the Medical Department, N. G. S. T., which held an examination some time ago to fill vacancies in the

medical corps, has announced the results of the test. As announced from the Adjutant-General's department recently, the following physicians compose the medical corps: Maj. James H. McCall, Chief Surgeon, Huntingdon; Maj. James R. Nankivell, Sanitary Inspector, Athens; Maj. Buford N. Dunavant, Memphis; Maj. Henry M. Cass, Morristown; Capt. Larkin Smith, Nashville; Capt. John W. Moore, Nashville; Capt. Robert B. Underwood, Memphis; Capt. Samuel L. Wadley, Memphis; Capt. J. Logan Morgan, Chattanooga; Capt. Stanley R. Teachout, Nashville; Capt. Jas. B. Cox, Huntingdon; Capt. Robert H. Newman, Knoxville; Capt. John H. McSwain, Paris; First Lieut. C. C. Hacker, Elizabethton; First Lieut. Karl Rogers, Knoxville; First Lieut. Edwin A. Sayers, Nashville; First Lieut. Percy A. Perkins, Memphis.

What has become of the Milk Commission appointed by the President of the Davidson County Society? It seems to us that this is the time for them to get together and be ready for the summer months which will soon be with us. Let us hear from you, brother, and let it be practical.

Clarence Baggett, the 18-year-old son of Dr. W. H. Baggett, of Dover, Tenn., was brought to Nashville, December 20, for treatment of blood poison resulting from a cut received on the calf of his leg. It is feared he will lose the leg.

Drs. R. E. Fort, W. D. Haggard, Robert Caldwell, James W. Handley and Richard Barr, all of Nashville, attended the meeting of the Southern Surgical and Gynecological Association at Washington, D. C.

The C. V. Mosby Company, of St. Louis, has announced the publication of a book on Pellagra, to be ready by January 1, 1912. This book is being prepared by Dr. Stewart R. Roberts, of Atlanta, Ga., who has just returned from Italy, where he studied the disease in its natural habitat. While in Europe the doctor made extensive research

regarding the etiology and treatment of pellagra, and the data contained in the book will reflect the latest and best work that has been done in connection with this disease, making it a reliable guide to those seeking information on the subject.

Dr. John A. Gaines, of Nashville, spent two weeks in Florida with a party of friends from Atlanta, Ga.

Dr. W. B. Anderson, while driving his automobile around the corner of Fifth Avenue and Broadway, knocked down Walter Anderson, aged 8, and ran over him. The wheels of the car, however, jumped over the boy's body and he escaped unharmed except for a few slight bumps on the head which he received in falling. Witnesses claim that the doctor was not at fault and that the boy darted in front of the car as it turned the corner.

Dr. E. Gustav Zinke, of Cincinnati, addressed the Nashville Academy of Medicine on December 20. His subject was "Puerperal Infection." The subject was capably handled by Dr. Zinke, and all in attendance derived much profit from his address.

We are pleased to note that Dr. Charles Mayo, of Rochester, Minn., who was recently operated upon for acute appendicitis, and cholecystitis is now reported out of danger. Dr. Mayo was visiting in New York at the time, and was promptly operated upon by Dr. Blake at the Presbyterian Hospital.

The *American Journal of Surgery*, published by the Surgery Publishing Company, 92 Williams Street, New York City, and so ably edited by Dr. J. MacDonald, Jr., promises in the early part of 1912 a special Western number of this magazine.

The following subjects will appear in this number, the character of which, prepared by these well-known surgeons, is sufficient to make this number particularly interesting:

"The Operation of Gastroenterostomy," by William J. Mayo, Rochester, Minn.

"The Surgery of Tendons," by John B. Murphy, Chicago, Ill.

"Operative Treatment for Graves' Disease," by George W. Crile, Cleveland, O.

"Colonic Intoxication," by J. E. Binney, Kansas City, Mo.

"Practical Points in the Surgical Treatment of Exophthalmic Goitre," by A. J. Ochsner, Chicago, Ill.

"Treatment of Foreign Bodies in the Esophagus," by E. Feltcher Ingals, Chicago, Ill.

"Brain Surgery Technique," by J. Rilus Eastman, Indianapolis, Ind.

"Treatment of Abscesses and of the Necrotic Foci Resulting From the Use of Salvarsan," by A. Ravolgi, Cincinnati, O.

"Treatment of Prostatic Obstructions," by E. O. Smith, Cincinnati, O.

Subject not announced, H. Tuholske, St. Louis, Mo.

"Artificial Tendons and Ligaments in the Surgical Treatment of Paralysis," by Nathaniel Allison, St. Louis, Mo.

"Uterine Cancer," by John C. Murphy, St. Louis, Mo.

"Arthritis Deformans," by Leonard W. Ely, Denver, Col.

"Acute Angulation and Flexure of the Sigmoid as a Causative Factor in Epilepsy, With Special Reference to Treatment," by W. H. Axtell, Bellingham, Wash.

SOCIETY PROCEEDINGS

SMITH COUNTY.

The Smith County Medical Society met in regular session in Carthage, Tenn., Friday, December 1, 1911, with a fairly good representation present. There were several interesting clinical cases reported and discussed.

Dr. Frank Swope, of Carthage, read an elaborate and instructive paper on "Pyæmia," in which he brought out many interesting and beneficial points. A general discussion followed.

The society proceeded to elect officers for the year 1912, which resulted as follows: Jo G. Bridges, of New Middleton, Tenn.,

President; J. H. Chism, of Carthage, Tenn., Vice-President, and B. J. High, of Elmwood, Tenn., Secretary and Treasurer.

Our society has done some nice work this year, and we hope to do better next year. The interest is greater now than it was at this time last year, and I feel sure that we will make advances along this line during the year 1912.

B. J. HIGH, *Secretary*.

WILSON COUNTY.

The Wilson County Medical Society met in regular session in the Watertown Bank Building, in Watertown, Tenn., December 7, 1911, where one of the most interesting meetings of the year was held.

The usual place of meeting is in Lebanon, but the society has adopted the plan of meeting in other towns of the county occasionally, hoping to reach some physicians who cannot arrange to come to Lebanon.

The meeting in Watertown was well attended and a lively interest manifested.

Dr. T. O. Bratton read a most interesting paper on "Septicemia." The discussion was opened by Dr. Oldham, of Mt. Juliet.

Dr. J. M. Weaver, of Silver Springs, brought before the society a patient with an interesting condition diagnosed as syphilis.

The program for 1912 is about complete, and we are expecting a better year in the next than this one has been.

We are always glad to have visitors from other societies with us, and, remember, anyone is always welcome.

The next meeting will be in Lebanon, January 13, 1912.

J. R. BONE, M. D., *Secretary*.

BEDFORD COUNTY.

The Bedford County Medical Society met Thursday, December 21st. After reading the minutes of the preceding meeting, a paper was presented by Dr. W. G. Frierson, subject, "Follicular Tonsilitis in Children." The paper elicited full discussion by the members of the society.

The following officers were elected for the ensuing year:

Dr. W. G. Frierson, Shelbyville, President.
Dr. F. B. Reagor, Shelbyville, Secretary-Treasurer, re-elected.

Dr. T. J. Coble, Shelbyville, Censor.

Dr. W. G. Robinson, Shelbyville, R. F. D. No. 3, Delegate State Association.

Dr. C. E. Meyers, of Unionville, was elected to membership. The name of an eclectic was also presented for membership, but after some discussion final action was deferred until the next regular meeting.

F. B. REAGOR, *Secretary*.

WHITE COUNTY.

The White County Medical Society met in regular session with the following members present: Drs. A. A. Bradley, W. B. Cantrell, R. E. Lee Smith, P. K. Lewis, D. R. Gist, W. M. Johnson, J. R. Gott, L. D. Cotton, W. L. Brock and A. F. Richards.

There being no clinics present, Dr. Cotton was present and read a paper on "Cancer," referring to the frequency of cancer in our community and our inability to relieve it. The subject elicited a good discussion.

Dr. W. B. Cantrell was present and read a paper on "Ovaritis," which was discussed by most all of the members.

Moved and carried to elect officers.

Moved to suspend the rules and elect by acclamation.

The following officers were elected:

For President, Dr. J. R. Gott, of Clifty, Tennessee; for Vice-President, Dr. W. L. Brock, Sparta, Tenn.; for Secretary-Treasurer, Dr. A. F. Richards, Sparta, Tenn.; for delegate to the State Society, Dr. R. E. Lee Smith, Doyle, Tenn; alternate, Dr. W. M. Johnson, Bon Air, Tenn.; Censors, Dr. W. B. Cantrell, for one year; Dr. L. D. Cotton, for two years, and Dr. S. E. Gaines, for three years.

The question of changing the meeting hour to be discussed at the next meeting.

PROGRAM FOR NEXT MEETING.

Dr. W. J. Breeding to read a paper, subject, _____.

Dr. Wm. Johnson to read in February.

QUERIES BROUGHT OVER FROM DECEMBER.

1. What is your opinion of the Rockefeller Meningetic Serum?—Johnson.

2. What is the opinion of this society as to the practicability of typhoid vaccination?—Smith.

4. Is pellagra primarily a disease of the bowel, skin or nervous system?—Richards.

5. What per cent primipara suffer slight laceration of perineum during labor?—Brock.

6. How does your mortality in diphtheria compare with a few years ago? Do you use the A. D. S. serum when in doubt?—Johnson.

A splendid meeting was had, and all enjoyed the privilege of talking and expressing their views. The profession of White County is in a safe financial condition, every one has a good business and not one drinks whiskey. No county in the State can boast of a cleaner set of men.

A. F. RICHARDS, *Secretary*.

KNOX COUNTY SOCIETY.

The Knox County Medical Society met in regular session Tuesday evening, November 28, with the following members present: Drs. W. S. Austin, C. J. Carmichael, C. Deaderick, E. A. Guynes, S. R. Miller, W. K. Vance, H. H. McCampbell, A. G. Kyle, R. M. McCown, G. W. Booker, O. W. Hill, C. B. Jones, C. E. Ristine, L. Sheddan and E. R. Zemp.

Vice-President Dr. W. S. Austin presided, our President, Dr. Wm. Bowen, who recently underwent an operation for appendicitis, still being unable to attend.

Dr. S. R. Miller, Censor on medical legislation, made a short talk upon Dr. Wiley's work in enforcing the pure food and drug law. He also called attention to the death of Surgeon-General Wyman.

Dr. Vance, as usual, read a most interesting and entertaining paper, which attacked some of the orthodox teachings of our text book authorities and condemned some of the practices of most of the physicians who endeavor to follow without question these authorities. The main feature in his paper was his condemnation of the use of morphine in the treatment of hemorrhage.

The discussion was opened by Dr. E. R.

Zemp, who was followed by Drs. Deaderick, McCampbell, Miller, Carmichael, Ristine, Kyle and Sheddan.

Interest in our society continues to grow, and we feel that we have one of the best societies in the State. Still there are a number of our members who never pretend to be present at any of our meetings and are members in name only. At a recent meeting we had twenty-five members present. Dr. C. G. Bull was the essayist for that meeting, his subject being "Present Status of Vaccine Therapy."

This was one of the most interesting papers ever read before the Knox County Society. Dr. Bull discussed in a very lucid manner the principles upon which vaccine therapy is based as well as some of the methods of preparing and administering vaccines.

The discussion of Dr. Bull's paper was opened by Dr. W. S. Austin, who was followed by several of the members present.

The Knox County Society meets every Tuesday evening at 8 o'clock in the chapel of St. John's Church on Walnut Street.

L. SHEDDAN, *Secretary*.

JEFFERSON COUNTY.

The Jefferson County Medical Society met in regular session December 5, 1911, with the election of the following officers: President, Dr. W. D. Tadlock, Talbots; Vice-President, Dr. W. F. King, Jefferson City; Secretary, Dr. B. M. Tittsworth, Jefferson City; Treasurer, Dr. P. A. Tinsley, Dandridge; Councillor, Dr. W. E. Roberts, Talbots.

B. M. TITTSWORTH, M.D., *Secretary*.

McMINN COUNTY.

The McMinn County Medical Society met in Athens, December 4, 1911, with an attendance of eleven members. An interesting paper was read by Dr. Nankivell, the subject of which was "Diabetes."

The following officers were elected: President, Dr. H. E. Center, of Etowah; Vice-President, Dr. G. W. Staunton, of Athens; Secretary, Dr. W. S. Moore, of Athens;

Treasurer, Dr. J. L. Proudfoot, of Athens. Dr. Taylor, of Calhoun, was elected Censor for three years.

W. S. MOORE, M.D., Secretary.

WASHINGTON COUNTY.

The Washington County Medical Society held its regular monthly meeting Thursday night, with the election of the following officers: President, Dr. J. P. Randall, of Johnson City; Vice-President, Dr. C. E. Smith, Johnson City; Secretary and Treasurer, Dr. J. W. Cox, re-elected, Johnson City; Censor, Dr. E. T. West, of Johnson City.

Dr. West read a very interesting clinical case, "Occlusion of the Popliteal Artery by Embolism Resulting in Dry Gangrene, and Necessitating an Amputation Two Inches Above the Knee." This was a unique case, as it followed the birth of a child four months, and was thought to be the result of a mitral valve lesion by reason of the floating fungi. The colored woman was 35 years of age and a mother of five children. She succumbed two and one-half weeks after the amputation from pneumonia. The amputation was satisfactory and the result good as far as the repair of tissues, etc.

Dr. Sells will read a paper at the January meeting on "Pneumonia."

J. W. Cox, M.D., Secretary.

MARRIED.

The marriage of Miss Barbara Barker, of Keysburg, Ky., to Dr. Frank Sory, of Adams, Tenn., took place in Clarksville, December 8. The marriage came as a surprise to the friends of the young couple. Dr. Sory is a prominent and successful physician of Adams, and the bride is a member of one of the best families of Southern Kentucky.

Dr. E. E. Reisman, of Chattanooga, was married to Miss Maidelle Rubenstein, of New Orleans, on December 27, 1911.

Dr. R. M. Colmore, of Chattanooga, was

married to Miss Margaret Bowboin, of New Orleans, on November 29.

BOOKS RECEIVED.

CASE HISTORIES IN MEDICINE, Illustrating the Diagnosis, Prognosis and Treatment of Diseases, by Richard C. Cabot, M.D., Assistant Professor of Clinical Medicine, Harvard Medical School. Second Edition, Revised and Enlarged. W. M. Leonard, Publisher, Boston.

NEW AND UNOFFICIAL REMEDIES, 1911, Containing Descriptions of the Articles which Have Been Accepted by the Council on Pharmacy and Chemistry of the American Medical Association Prior to January 1, 1911. Chicago Press of the American Medical Association, 535 Dearborn Avenue, Chicago.

INTERNATIONAL CLINIC. A quarterly of illustrated clinical lectures and especially prepared original articles on Treatment, Medicine, Surgery, Neurology, Paediatrics, Obstetrics, Gynecology, Orthopaedics, Pathology, Dermatology, Ophthalmology, Otology, Rhinology, Laryngology, Hygiene and other topics of interest to students and practitioners. By leading members of the medical profession throughout the world. Edited by Henry W. Cattell, A.M., M.D. Volume IV. Twenty-first Series, 1911. J. B. Lippincott Company, Philadelphia, Pa. Price, \$2.00

PROGRESSIVE MEDICINE. A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by Hobart Amory Hare, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College, Philadelphia. Assisted by Leighton F. Appleman, M.D., Instructor in Therapeutics, Jefferson Medical College, Philadelphia. Volume XIII, No. 4, December 1, 1911. Six dollars per annum. Lea & Febiger, Philadelphia.

BOOKS REVIEWED.

THE AMERICAN ILLUSTRATED MEDICAL DICTIONARY. By W. A. Dorland, A.M., M.D. Sixth Edition, Revised and Enlarged. W. B. Saunders Co., Philadelphia.

In reviewing Dr. Dorland's Sixth Edition, we feel that we are justly entitled to express our highest approval of this *complete* work. Former editions have met with general approval, but this, the latest issue seems to have incorporated every necessary feature for which we should consult a dictionary.

The new features are Capitalization, Veterinary and Dental Terms, Medical Biographies, Dosage, and Therapeutic Tables.

Under Medical Biographies, it gives the full name, nationality, specialty and dates of birth and death of men whose names have been given to diseases, structures, procedures, etc. Also biographic sketches of the "fathers" of medicine.

Especially valuable features are that every word is given a short but complete and comprehensive definition, pronunciation, etc., and one is not referred to other sources to find the information.

It is with pleasure we commend Dr. Dorland's latest edition and congratulate the publishers upon their most excellent work.

A TEXT-BOOK OF PHYSIOLOGY FOR MEDICAL STUDENTS AND PHYSICIANS. By William H. Howell, Ph.D., M.D., Sc.D., LL.D., Professor of Physiology in the Johns Hopkins University, Baltimore. Fourth Edition. W. B. Saunders Company, Philadelphia.

The three preceding editions of Professor Howell's physiology have proven beyond doubt his merit as a teacher and a writer. Most of the medical colleges throughout our country have adopted his work as their text-book, which of itself shows how very meritorious it is. Professor Howell appreciates the difficulties confronting an author in chronicling the great mass of experimental work which has been done in this department recently, and wisely makes no effort to confuse the student with hypothetical reasoning, but states clearly, briefly and concisely the proven advances in physiological thought. Professor Howell's method of presentation is so clear and concise that, though dealing with a subject offering many complexities, it is so clearly stated that it may be comprehended by any one who possesses an elementary knowledge of anatomy, physics and chemistry.

A DISTINCTIVE PIECE OF LITERATURE.

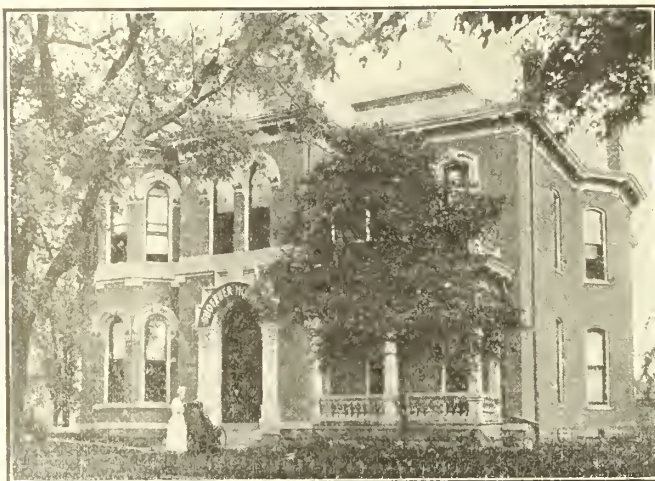
"Here is something different." This is apt to be the first thought of the physician upon breaking the

wrapper of Parke, Davis & Co.'s new brochure on bacterial vaccines and tuberculins. And the external appearance of the book is in no wise misleading. The "difference" applies to the printed page as well as to the handsome cover in artistically blended browns and gold. The brochure contains forty-eight pages in addition to the cover and thirteen full-page engravings in colors.

The work is divided into three parts or sections. Some of the subjects considered in the first section are: "What Is the Difference Between Bacterial Vaccines (Bacterins), Serums and Toxins?" "How Are Bacterial Vaccines Prepared?" "Therapeutic Action of Bacterial Vaccines;" "When Should Serums Be Used, and When Bacterial Vaccines?" The second section treats of the origin and nature of the bacterins, the relative merits of "stock" and "autogenous" vaccines, the opsonic index, and the best method of using the bacterins, together with a description of each vaccine, including references to preparation, therapeutics, and dose. The third section is devoted to a consideration of the tuberculins, with dilution and dose tables, descriptions and illustrations of the various diagnostic tests, etc.

Briefly stated, the booklet is a concise review of the essential facts relating to bacterial-vaccine therapy, containing precisely what the seeker after this kind of information wants. It is not padded with clinical reports—in fact, it contains none. We understand that Parke, Davis & Co. will be pleased to send a copy of this unique and valuable brochure to any physician requesting it. Address them at their home offices, Detroit, Mich., specifying the "new booklet on bacterial vaccines," and mention this Journal.

SHOFFNER HOSPITAL

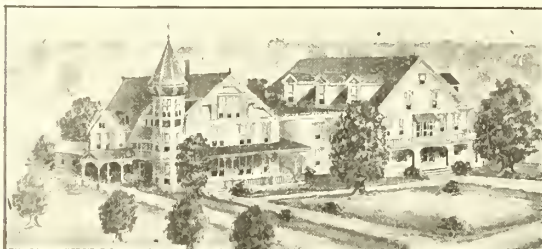


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CESAREAN SECTION FOR PUERPERAL ECLAMPSIA; REPORT OF THREE SUCCESSFUL CASES WITH THREE LIVING CHILDREN.*

BY WILLIAM D. HAGGARD, M.D.

*Professor of Surgery and Clinical Surgery,
Vanderbilt University, Nashville, Tenn.*

Puerperal eclampsia remains one of the most dramatic accidents of the lying-in-chamber, and in spite of all forms of treatment is one of the most difficult and trying of all obstetrical complications. The profession is far from agreed upon the treatment in the various forms, and, indeed, the causes of this condition are not yet clearly understood. There are undoubtedly several types and perhaps with widely varying causes. In consideration of the fact, however, that with all methods of treatment the maternal deaths, according to McPherson, numbered 30.8 per cent, and the loss of child life reached 44 per cent, it is incumbent upon us, if possible, to determine upon methods of treatment which will reduce this terrific mortality. It is the purpose of this paper to draw attention to one form of treatment, namely, Cesarean Section in cases of eclampsia that are at term but not in labor.

They are notoriously the most difficult to handle, and all instrumentations and other

methods of delivery are attended with the highest mortality. I beg herewith to append the report of three cases of eclampsia, all at term but not in labor, subjected to Cesarean section, with recovery of all the mothers and children.

Case 1.—A nullipara 19 years of age, pregnant eight months, had for two weeks been swelling about the face and limbs and passing a small quantity of urine. She was nearly at term. There was occasional vomiting and she complained of specks before her eyes. Suddenly, on the morning of January 27, 1907, at 5 o'clock, she was seized with a hard convulsion which lasted some five or ten minutes. She had one other, and Dr. Tanksley saw her, and at the advent of the third convulsion administered chloroform. Dr. Altman saw the patient in consultation, and tincture of veratrum viride was administered hypodermically to the amount of 22 minims. The convulsions continued in spite of chloral and chloroform. I saw the patient in convulsions at 9 a. m., in consultation with Drs. Tanksley and Altman. It was decided to empty the uterus at once. The various means for so doing were discussed. The ordinary induction of labor was deemed inexpedient, as she probably would not have responded to the stimulation of a catheter, inasmuch as she was not in labor. Moreover, it would have been too slow. Some rapid method seemed to be indicated, as the convulsions were continuing in frequency and severity. Manual dilatation of the cervix was thought to

* Read before Nashville Academy of Medicine.

† Bulletin N. Y. Lying-In Hospital, 1910, Vol. VI, p. 123.

be unwise, as it was necessarily slow and tedious and fraught with considerable danger from extensive traumatisms and lacerations. One then has the problem, after the dilatation of the cervix has been accomplished, of delivering the child at the expense of laceration of the undilated soft parts. These many and real dangers make it, in the opinion of the consultants, a very formidable undertaking, particularly when it was planned for the relief of such urgent symptoms. Vaginal section was discussed, but, as she was a nullipara, it was thought that Cesarean section would be the most rapid and altogether the most satisfactory method under the circumstances. Accordingly, she was removed to St. Thomas' Hospital, and while on the table preparatory to the operation had the tenth convulsion. She had been continuously comatose since the first convulsion, seven hours previously. The abdomen was incised under chloroform; a male child that weighed seven and one-half pounds was abstracted through the uterine incision, and was taken in charge by Drs. Altman, Tanksley and J. W. Maddin, Jr. The placenta was removed and a piece of gauze passed down through the cervix. The uterine incision was closed with locked catgut suture in two layers and the abdominal incision closed. The entire operation comprised seventeen minutes. The patient had no shock, but had one convulsion two hours afterward and one other after the next six hours. She, however, remained quite restless, although unconscious. Infusions of salt solution a quart at a time were given every four hours in the thigh and back. She had two doses of veratrum viride of ten minims each when the pulse got above 100. On one occasion it reached 120, and thirty minutes after the hypodermic of veratrum viride the pulse was lowered to 80. Fifteen grains of chloral was given per rectum every two to four hours to control the restlessness, but, in spite of that, the patient had to be placed in a restraining sheet. She had altogether three drachms of chloral in the first thirty-six hours. On the second night she drank ten pints of water, according to the nurse's

record. The urine drawn by catheter at the time of operation amounted to six ounces and contained a large quantity of albumen, granular and hyaline casts. She secreted about ten ounces only in the first twenty-four hours, but eighteen ounces on the morning of the second day at one time within ten hours. Four minims of croton oil was administered shortly after operation in two doses, without effect. Another



FIG. 1

preparation of two minims given with ten grains of calomel acted freely after eight hours. Patient became conscious in thirty hours after the operation.

The patient had a number of nervous manifestations simulating hysteria some four weeks after the operation. This was managed with some difficulty, but finally cleared up entirely.

The infant was nursed for the first two weeks by a foster mother and thrived. An effort was made to preserve the lactation in the parturient, but without avail, and hence the child had to be reared on artificial food.

The child is now five years old (Fig. 1).

Since that time the mother has given birth to two other healthy children, who are aged three years and thirteen months, respectively.

CASE TWO.

Mrs. E. J., aged 23, had been married three years. In her first pregnancy she was quite well until about mid-term, when she had a slight hemorrhage for about an hour, which stopped with rest in bed and did not recur. She remained well until a week before her eclampsia began, with the exception of some cramping in the calves of the legs. I may say also she was swollen very much in the lower extremities after the third month, and had been having a very scanty amount of urine for some time. She was subject to nearly constant headaches, and for the preceding week the vulva was swollen very much indeed. There had been no examination of the urine, although a physician had been engaged and paid in advance.

At the advent of the swelling of the labia she was put to bed, where she remained. At the end of a week she was taken with convulsions, and between the first few she was unable to see. After the first few convulsions she was in continuous coma between seizures, and when brought to the City Hospital had had eighteen convulsions. She was something over eight months advanced in pregnancy, but was not in labor.

Twelve hours after the onset of convulsions I saw her in consultation with my colleague, Dr. R. O. Tucker, and we decided upon the propriety of immediate emptying of the uterus, and agreed that the shortest, safest and easiest plan for the mother and child was abdominal Cæsarian section. This was accordingly performed, and, as her condition was extremely grave, it was done with as much expedition as we were capable of. No difficulty was experienced, and a living girl baby, weighing seven and three-fourths pounds, well developed, was delivered. The entire operation comprised thirteen minutes. The patient never had another convulsion, but was comatose for the better part of four days.

On the fifth day, for the first time, she was able to discern objects, and from that time on, while her convalescence was slow, it was extremely satisfactory.



FIG. 2

The operation was performed November 14, 1909. Both are living and well (Fig. 2). The mother has recently given birth to another child normally and without any difficulty whatsoever.

CASE THREE.

Mrs. J. C., primipara, aged 22. This patient had been threatened with a miscarriage one month before the onset of eclampsia, but, with quietude in bed, the symptoms abated. At that time Dr. Van Coles, who was the attending physician, found the urine normal.

About a month afterwards, which was at the expiration of her eighth month, Dr. Coles saw her with eyelids greatly swollen, urine scanty, headache (very severe for the preceding week), spots before the eyes for some three weeks, and the urine was loaded with albumen. Her pupils were considerably dilated and she was unable to see out

of one eye. She was put upon active purgation and an exclusive milk diet. She did not improve, however, the limbs being so edematous that when she crossed them the indentation remained some time. The blindness persisted. The edema of the face and the limbs was very marked, associated with extreme pallor. When I saw her, in addition to the above condition, the pulse was 160. She looked as though she might go into convulsions at any time, and, in consultation with Dr. Tucker, we decided to remove her to the hospital, where hot packs were applied, purgation continued and stimulants administered. It was noticed that she had a small adenoma of the thyroid, which had begun at the age of eleven, and was about the size of a lemon. Her grandmother and aunt and sister had goiter, and it had not been regarded as being of any significance. In view of the theory that certain toxins of pregnancy are due to the inability of the gland to neutralize the toxins, which is believed to be one of its functions, she was put upon thyroid extract. Our theory was that the growth in the thyroid gland had by pressure decreased its ability to manufacture the normal amount of secretion, plus the increased amount which is supposed to be necessary in the latter months of pregnancy, as is manifested normally by the enlargement of the thyroid gland. It is pretty generally understood that if the thyroid does not enlarge in a patient by the seventh month, eclampsia may be feared. We felt in this case that the thyroid had not enlarged, which was due to the pressure of the goiter.

After twelve hours the patient made no improvement, and, while she had no convulsions, the urine was scanty, having both granular and hyaline casts, with pulse at 160. Her general condition was so serious that we recognized she would be unable to deliver a child if she went into labor, and if she went into convulsions we would be unable to deliver her by ordinary measures in time to save her or the child.

Accordingly, elective Cesarean section was performed very satisfactorily at St.

Thomas' Hospital on the morning of June 11, 1911. The operation required seventeen minutes, and the child after extraction seemed lusty. The patient had no convulsions, but continued with a rapid pulse and scanty urine for some days, and was not able to recognize individuals by sight until the sixth day. She was carried home on the tenth day, but kept in bed three weeks.



FIG. 3

The milk flow was not established until some six weeks, at which time the child was placed upon the breast, and has continued in a healthy condition. (Fig. 3.)

The most generally accepted theory of the causation of puerperal eclampsia is that it is a toxemia caused by the increased metabolism and insufficient elimination caused by the presence of the fetus. It is strikingly similar to other forms of general toxemia, such as the coma of diabetes, uremia, yellow fever and other poisons. Moreover, the symptoms of headache, nausea, etc., are those of toxemia. Then, too, the convulsions and coma are similar to the symptoms in other forms of toxemia.

Another theory is that the placenta man-

ufactures—or, at any rate, contains—a fibrin ferment which acts as a toxemia to the maternal blood. The Italian school holds that there is a toxine in the blood of the mother, which, under certain conditions, is pathologic. Massini believes that the secretion of the thyroid gland in some way antidotes these poisons, unless, perchance, there is an insufficient secretion, and then eclampsia develops. I think we could proceed on the theory that the placenta is at least a contributory factor, and that there is really a more or less general toxemia which affects particularly the kidneys and the liver. Post-mortems have shown not only the condition of acute nephritis, but also fatty degeneration of the liver, which is seen in other toxemias.

Whatever the theory of the causation, most men are agreed that the emptying of the uterus is the most essential thing for the eclamptic woman.

McPherson, in analyzing 250 cases of eclampsia which occurred in nearly 15,000 labors at the New York Lying-In Hospital (Out-Patient Department), found one case in every 1,057, although in the hospital the proportion rose to one in 60, which was attributed to the fact that many of the outdoor cases developing eclampsia were brought to the hospital, most of these cases occurring between the ages of 20 and 25, something over one-half of them occurring before labor, a little over one-third after labor, and only about one-tenth during labor. The maternal mortality was 30.8 per cent, and 44 per cent of the children were lost. There were 89 cases treated by manual dilatation and version, with a maternal mortality of 30.5 per cent and a fetal mortality of 62.9 per cent. The forceps were employed in 49 cases, with a maternal mortality of 20.5 per cent and a fetal mortality of 40.4 per cent. Labor was induced by bags in 7 cases, with a fetal and maternal mortality of 28¾ per cent. Of 12 cases of Cesarean section, 40 per cent of the mothers died, although all of the children were saved. He attributes the high mortality to the delay in sending the cases into the hospital. This, perhaps, would not

have effected the mortality as much in any other method of delivery as by Cesarean section.

I very strongly believe that properly performed Cesarean sections are not more dangerous than a high forceps operation and podalic version; and certainly the dangers of traumatism, infection, prolonged anaesthesia, etc., are not nearly so grave with Cesarean section as they are with *accouche-ment force*. All of this is particularly true of the class of cases in this paper for which Cesarean section is proposed—i. e., cases at term, but not in labor, with eclampsia. The dangers of forcible dilatation and extraction of the child in these cases is extreme and would certainly yield the highest possible mortality in the children as contrasted to the lowest possible mortality by Cesarean section.

If for any condition the operation is deferred until the patient is almost moribund, or as the result of repeated and impotent methods of delivery from below, and the loss of considerable time, and grave infections have resulted death should not be charged to a Cesarean section performed at the eleventh hour. It is conceded that all of the various forms of treatment in the average cases of eclampsia have their place. Certainly the prophylaxis is the greatest of all methods in these cases.

Some men attempt to treat the toxemia by various methods without prompt delivery. So excellent an obstetrician as Zinke supports the dictum, "Assist in labor, but do not induce it," or "Treat the convulsions, but let the pregnancy take care of itself." While I cannot agree with that, I am in thorough accord with the statement, "If the patient is near term, but not in labor, the conservative Cesarean section should be selected, provided strict asepsis can be procured."

While Zinke does not believe in emptying the uterus as soon as possible in every case of puerperal convulsions, regardless of the period of gestation, he does say, "If the symptoms are very threatening and the medical treatment does not afford prompt amelioration, the uterus should be emptied."

In regard to Cesarian section in general, Asa B. Davis, of the New York Lying-In Hospital, who has had the largest personal experience with this operation, numbering 104 cases, with a maternal mortality of 14.4 per cent, enumerates the following indications:

Obvious disproportion of the pelvis; deformity due to rickets, exostoses, neoplasms of the pelvis, uterus and rectum; impassable cicatrices. Some cases of impacted face and breech where infection has been avoided. Some cases of tonically contracted uterus and accidental hemorrhage. He adds that if more cases of well-marked placenta previa are delivered in well-equipped hospitals by Cesarian section, better results would be obtained for mother and child, and concludes with the statement that a very large proportion of eclampsias are best delivered by Cesarian section. He gives as indications caused by the child, large non-molding heads, with thick cranial bones and small fontenells, monsters and the like.

"There is a class of cases in which Cesarian operation comes into competition with delivery by forceps, podalic version, accouchement force, pubiotomy or some of the so-called Cesarian sections with various prefixes, where it becomes a matter of judgment with the surgeon which operation shall be done. He seldom regrets selecting Cesarian section. It has been our experience often to deplore having done some of the other operations. It is not easy to forget the dead or maimed children, some of the latter carrying their physical and mental deformities throughout their lives, or the mothers who are rendered permanent invalids because of shock and extensive lacerations which are incapable of being entirely repaired, when we feel sure that a healthy, uninjured child could have been delivered and the mother restored shortly to good health in many cases had Cesarian section been done." (Davis.)

In regard to the results, it may be stated that in Zweife's clinic there were 76 conservative Cesarian sections, with only one death.

In Schautas' clinic 170 Cesarian opera-

tions were done for about every possible indication, with a recovery of 92 per cent.

Reynolds, of Boston, has done 30 Cesarian sections, with 30 recoveries.

Mouchotte reports 14 cases at the Baudelocque Clinic in Paris for contracted pelvis, with fetal and maternal recoveries of 100 per cent.

The object of this paper is to focus attention upon what may be deemed as the strongest relative indication which we have for Cesarean section—namely, its early performance in cases of puerperal eclampsia of severe gravity at term, but not in labor.

PELLAGRA: REPORT OF CASE*

BY K. S. HOWLETT, M.D.,
FRANKLIN, TENN.

This patient, white, female, age 34 years, married, one child 10 years old, no other pregnancies, had always lived in comfortable surroundings, and been supplied with good, wholesome, well-prepared food.

She was an accomplished pianist, taught a music class during the week, and acted as organist at one of the churches on Sunday. In addition to this, she had for a few years been compelled to assume the burden of the family financial as well as the domestic affairs.

She was of high-strung, nervous temperament, and did her work rather strenuously.

She had been left with an unrepaired laceration of the perineum at the birth of her child, and from the history must have had some infection during the puerperum. As a result of this, probably, she had for a number of years had constant pain in the appendiceal and right ovarian region with infrequent exacerbations. She had a slight uterine lateral displacement and suffered some pain with the menstrual flow which was prolonged and excessive.

About three years ago she had a sudden pronounced attack of nervous prostration, with decidedly hysterical manifestations, which took her away from her work and

*Read before Middle Tennessee Medical Association, Gallatin, Tenn., November, 1911.

put her in bed for a week or ten days. In this illness she proved a most tractable patient, readily adopting the suggestions laid out for her, and made a prompt, though not altogether complete recovery. She resumed and continued her work until the end of the school term (only a few weeks), and during the summer following took a good rest and apparently got strong and well.

For the next three years she kept herself under my observation and care. She continued her work and maintained fairly good general health, though she did have two or three nervous break-downs, similar to the first, but less severe.

In March of this year she began to complain of increased nervousness, a feeling of mental and physical prostration and insomnia. She presented at this time uncontrollable emotional and hysterical symptoms, depression of spirits, and extreme melancholy tendency. Her mental condition was evidently abnormal and unsound, and she had some positive though ill defined delusions. These applied chiefly to her own physical condition and that of her ten-year-old son.

She constantly showed great anxiety about the health of her son, frequently brought him to me for examination, though he declared himself to be perfectly well, and a careful examination proved him to be a strong, active, physically sound boy.

As to her own condition, she complained of numbness in her arms and legs, maintaining with earnestness that her limbs at times were paralyzed, and that she could not move them. Under urgent assurance she would move them, however, and the delusion disappear, only to return again and again.

She also complained of vertigo all the time, and felt that she would fall if she tried to walk, and when she did walk she insisted that she was unable to place her feet where she intended. This was not apparent to myself or any other observer, but was persistent with the patient, as long as she was able to walk at all. She had an uncomfortable sensation of the brain being cold, and wanted the head wrapped in some sort of warm covering even in hot weather.

She complained of many other indefinite, poorly defined nervous symptoms, suggestive of hysteria. The pupils were normal, the reflexes slightly exaggerated, and both she and her family were assured that there was no organic nervous disease or indications dangerous to life present.

She continued to display immoderate anxiety about her health, and insisted upon submitting to any kind of treatment or change that promised any relief.

The metrorrhagia being rather troublesome at this time, I suggested her hoping to get some mental effect from the operation, as well as to relieve the prolonged and excessive flow. She was relieved of all the pelvic trouble, pain, wasting, etc., but the nervous symptoms seemed positively exaggerated following this operation.

In May she was sent away for an indefinite visit among friends, where it was thought surroundings would be pleasant and enjoyable to her. She left home with reluctance, however, soon became dissatisfied and homesick, and came home in spite of protests from all sides.

During this visit in the latter part of May the eruption on the hands and forearms appeared. The skin on the dorsum became red and swollen and the fingers stiff. There was a burning sensation in the skin, but no great discomfort. A physician was consulted, but it was finally decided that the exposed skin had become sunburned during a horseback ride a few days before, when short sleeves had been worn.

I saw her and examined the hands carefully a few days later. At this time, though the eruption had been present only a few days, the skin was dry, harsh and fissured, and presented a chronic eczematous appearance. The patient stated that her father (who had died fifteen years previous to this time) had had "tetter" on his hands for years before his death, and seemed exercised for fear that the trouble would become chronic and persistent; her fingers became stiff, lost their accustomed nimbleness, and her occupation became hindered thereby. While the patient seemed almost in a panic about the condition of her hands,

I considered this was only in accord with her tendency to exaggerate all her complaints, and endeavored to reassure her as much as possible, and she seemed to forget the hands in her continued anxiety about other discomforts which became increasingly troublesome.

For instance, one day, being alone in her home, she called her sister by telephone, telling her that she had had a stroke of paralysis; that her legs were helpless; that she had to drag herself to the telephone. She said the paralysis was increasing, and that she believed that she was going to die there alone. The sister called for me, and I being out, my assistant, Dr. German, went to see her at once. He found her lying on a couch in what appeared to him to be a purely hysterical condition. She insisted that she could not stand on her legs, but upon positive assurance and much urging from him she did get up, walk out and get in his automobile, and was carried to her sister's house.

We had many similar experiences with her, the delusions rarely being the same. While we could usually demonstrate to her that her complaints were not real, she would seem only half convinced, and would come back in a day or two with the same or a new complaint.

I report these things in detail to show upon what apparently good grounds we based our diagnosis of pure hysteria at this time.

The symptom which was most persistent and which seemed to give the patient most concern, was the Vertigo, felt more especially when awakening in the morning. She would insist that if she were to get up and try to walk she would fall, and when forced to get up and walk would insist that she staggered in walking and could not place her feet where she tried to. None of us, however, could detect any unsteadiness in her gait.

This special symptom became so troublesome that in August she was taken to Dr. George H. Price, who had fitted her with glasses a short time before. Upon examination of throat, nose and ears, he rather

thought there was enough pathology in these to cause the vertigo, etc., and hoping again to get full benefit from suggestion, we gave her every assurance that all her trouble was caused by this, that it was a condition easily corrected, and that when corrected she would be entirely well. She apparently accepted this and seemed much more hopeful.

However, she complained excessively, and I thought unnecessarily of each treatment with throat mop and Politzer bag, would become nervous, hysterical and prostrated, and after each treatment would have to go to bed for several hours. During all this time her mental condition gradually grew worse. The delusions grew each day more persistent, the mental faculties more dull. She seemed quite slow to comprehend, and her face, normally bright, attractive and expressive, looked blank and dull, and she gave every indication of a positive dementia. She was also perceptibly losing flesh and strength.

It was not until this time, the latter part of August, that the diagnosis of pellagra was made, though she had shown skin lesion since May.

It might be well to state that during that time the osteopaths got hold of her for a while, but evidently did not suspect pellagra, and even their hypnotic power did no good. On the contrary, each seance seemed to aggravate her symptoms, and after a short time she abandoned them.

From the last of August the downward progress was surprisingly rapid. Her mind became more and more dull, the delusions more numerous, less definite, and rather incoherent, and becoming more like a low quiet toxic delirium towards the end. The pulse was rapid and weak and the temperature never above normal, usually subnormal.

In September she was put to bed, with a competent trained nurse in charge, and put under a strict rest-cure treatment, with forced feeding, etc. Up to this time there had been absolutely no gastro-intestinal disturbance.

Soon after beginning this treatment she began to have two or three loose foul-smell-

ing stools a day. It was thought, however, that the full diet, including from two to six eggs a day, accounted for this, and no other significance was attached to it. There was no redness of the tongue or sore mouth. She had fair appetite, took all the food given her with some degree of relish, and seemed to digest and assimilate normally.

Only four days before her death, very suddenly the mouth became sore, the tongue and mucus membranes very red, and an uncontrollable, colliquative diarrhoea set up, the stools being large and of most offensive odor.

The eruption in the beginning was dull red, the skin being swollen with some fissures or cracks, out of which there was slight oozing. The skin became darker and very dry and harsh. There gradually appeared some atrophied spots, which assumed a paler color than the surrounding area, which was a dull mahogany with some thickening. The eruption was practically symmetrical on both hands and there were spots on the arms up to and on the elbows, none on any other part of the body or face.

The mental phenomena towards the end were most distressing. Dr. J. W. Stephens saw her five days before her death, concurred in the diagnosis of pellagra, stating that the mental condition indicated a toxic psychosis.

She seemed rational at this time, except for some peculiar delusions as to her physical condition, one being the idea that her tongue was strung on wires, which prevented her from protruding it or from moving it freely in talking.

From this time on her mental faculties seemed to succumb rapidly to the toxemia. She soon became practically unable to comprehend at all, her expression becoming almost idiotic and her mental condition approached absolute imbecility.

During the last few days the insomnia, which had been a troublesome feature all the time, became more so. She lay for two days and nights with eyes wide open and staring. Bromides in 30-grain doses had no effect and morphine failed to produce sleep. The patient had always

been peculiarly susceptible to chloral, and had stated it acted like "knock-out" drops with her. Fifteen grains of chloral was given the day before her death, and she slept so profoundly and so long from it (or from exhaustion) that we entertained the hope that she would awake in better mental state.

However, as the effect passed off, she became more and more restless, becoming violent and trying to get out of bed, and the nurse felt compelled to give her a second dose during the night, which quieted her at once.

When I saw her next morning she was in a profound stupor without any pulse at the wrist, and died three hours later without regaining consciousness.

Her death occurred on October 27, seven months from the beginning of her illness.

The special features of this case to which I would call attention are, viz:

First—The delay in the development of the gastro-intestinal symptoms. Except for two or three loose stools a day there was absolutely no evidence of disturbance in the alimentary tract until four days before her death.

Then these symptoms came on like a sudden storm in the most aggravated form, sore mouth, fiery red tongue, loss of appetite, nausea, vomiting and diarrhoea.

Second—The rapidly progressive prostration, loss of strength and flesh, in spite of the fact that the patient was taking and apparently assimilating ample nourishment.

Third—The peculiar and most distressing mental condition which leads one to suspect that there must have been some serious and perhaps organic disturbance in the nerve centers antedating the pellagra infection and predisposing to it. It is noted that the insane seem peculiarly liable to develop pellagra.

It may be as claimed by some, merely a symptom-complex of various forms of insanity.

So far as could be ascertained, this patient had no possibility of exposure to any other case of pellagra. Her use of corn

products had been limited and she had lived under the same surroundings as to food, habitation, as the average well-to-do Middle Tennessee family.

CHRONIC PELVIC INFLAMMATION.*

BY H. M. TIGERT, M.D.

Professor of Gynecology, Vanderbilt University, Nashville, Tenn.

Mr. President and Fellow-Members of the Aesculapean Club:

From a gynecological standpoint, pelvic inflammation assumes an exceedingly important role, not only because of its very great frequency, but also because of its far-reaching effects upon the physical and social well-being of its victims. There is, perhaps, no single subject in the whole category of diseases of women upon which so much has been both written and said.

It was not until the advent of abdominal surgery that any material advancement was made in the management of these cases, and then only after a sad and bitter experience, humiliating to the surgeons and costing the lives of hundreds of patients. While much of this field still remains unexplored, clinical experience, aided by the laboratory, has been able to lay down certain principles which serve as a practical guide to the rational treatment of a large proportion of this class of infections.

The bacteriological examination made by Andrews of 684 cases from twenty-nine of the best operative clinics showed the following results:

(Exclusive of tubercular cases)

Sterile	55 %
Saprophytes alone	6 %
Gonococcus	22½ %
Streptococcus and staphylococcus	12 %
Pneumococcus	2 %
Bacillus coli communis	2½ %

Menge examined 106 cases of pyosalpinx, and his findings closely coincide with those of Andrews and were as follows:

Sterile	68 %
Gonococcus	22 %
Tubercular	9 %
Streptococcus	4 %
Staphylococcus	1 %
Anaerobic bacilli	2 %

*Read before Aesculapean Club, Nashville, Tenn.

Hyde examined bacteriologically 2,973 cases, excluding tubercular infections, and he found 1,998 sterile, 579 gonorrheal; other and mixed infections in 456. Of 312 cases, excluding tubercular ones, examined by Noeggerath and Wertheim, 122 were sterile, 56 due to gonococcus, 11 to streptococcus and 6 to staphylococcus. Many other observers have corroborated the findings of the investigators just quoted, and I think it unnecessary to encroach further upon your time for statistical analysis. Certainly the findings of such competent observers, working independently, and arrived at after an exhaustive and painstaking study of such a large number of cases, cannot be gainsaid, especially since their findings present such a striking analogy.

From the above statistics it is quite evident that the gonococcus is by far the most prevalent infective micro-organism with which we have to deal in pelvic inflammation, and when we recall the fact that nearly all sterile cases were of gonorrheal character originally, the percentage becomes still greater. Guthrie has carefully collected the statistics from fifteen surgeons, and finds that 70 per cent of all their cases of chronic pelvic inflammation were due to the gonococcus. Next to the gonococcus in point of frequency is the streptococcus, which may be said to comprise about 8 or 10 per cent of all cases. All the remaining group of causative micro-organisms, exclusive of tubercular ones, constitute a very small percentage of the cases. Mixed infections are not nearly so common as might be supposed, and, when exhibited, usually present the symptoms and clinical findings of the most virulent micro-organism present. Such infections should be regarded as belonging to the clinical class of which they present symptoms.

It is quite true that some cases will present themselves due to one or more of the rarer etiological bacteria which will defy classification, and which, in the present state of medical knowledge, must be overlooked. Perhaps serums and bacterins may yet be developed to a point where correct diagnoses may be arrived at in this

class of cases through their aid, just as we have an index to tubercular cases by means of tuberculin.

From the foregoing it is quite evident that the vast majority (perhaps 80 or 85 per cent) of all cases of chronic pelvic inflammation, from an etiological standpoint, fall into one of two classes—either the gonococcic, which is by far the larger, or the streptococcic group.

It might be well at this point to pause for a moment and review very briefly some of the biologic characteristics of these two micro-organisms. The gonococcus is essentially a surface bacterium. Wertheim, however, has been able to demonstrate it in a few cases in the deeper connective tissue of the uterus, the bladder wall and the lymphatics, but these cases are marked exceptions to its usual behavior. Joseph Brettauer, of New York, in speaking of the surface growth of the gonococcus, says that the most distinctive proof of the surface growth and development of the gonococcus is the absence of inflammatory conditions in the pelvic cellular tissue, and that there are not more than four authentic cases reported of exudation into the broad ligament or into any of the pelvic cellular tissue spaces which were caused by gonococcic invasion alone, and winds up by saying that even these offer some ground for dispute. Upon this point Crossen says that the gonococcus seldom extends through the uterine wall into the parimetrium, and even when it does extend into the connective tissue, it is not likely to form an inflammatory mass. Steinschneider and Schaeffer injected pure cultures of gonococci into the connective tissues, but no decided inflammatory reaction resulted.

Though parimetrial abscess may occasionally result from gonococci as demonstrated by Wertheim and others, it is so rare as to be a curiosity. Bumm claims that the favorite nidus of the gonococcus is the duct epithelium, and that the secreting epithelium of glands is practically immune to its invasion. The gonococcus, having passed the cervix easily, sets up endo-metritis, salpingitis, pelvic peritonitis

and oophoritis, in varying degrees of intensity, which later may result in pyosalpinx, ovarian abscess or tubo-ovarian abscess. Nearly all pus tubes are of gonorrheal origin, as shown by the 106 cases examined by Menge and referred to before in this paper.

Inflammatory masses in the pelvis of gonorrheal origin manifest themselves in most every instance as tubal or tubo-ovarian masses, situated laterally and high up, or when prolapsed, in the cul de sac of Douglas, when a more or less distinct groove will be found separatog them from the uterus.

Another characteristic of gonococci, which is most important from several standpoints, is the loss of virulency and death of the micro-organisms, when confined to circumscribed cavities, after the lapse of time. This is probably due to a deprivation of certain essentials to their growth, and perhaps in part to their own toxins. It has been shown by Hartman, Morax and others that this death of these bacteria in walled-off cavities usually takes place within four months. The gonococcus shows this characteristic much more markedly than any other micro-organism invading the pelvic structures, and hence it is not surprising that it has been demonstrated that nearly all the sterile cases were originally gonorrheal in character.

As I wish later on to take into account the histories of these cases, it may not be amiss to call attention to some of the earlier symptoms of gonorrheal infection in females. The primary infection is usually in the urethra and vulva, and at times the cervix. Not infrequently the onset of gonorrhea in females is marked by very slight symptoms, so that they may not come under observation until the sub-acute or chronic stage is reached; hence adnexal diseases coming on without apparent cause are most usually of gonorrheal origin. The gonococcus is practically the only germ that will spontaneously invade the normal non-puerperal uterus and tubes. There are, however, a few rare exceptions to this rule. In acute cases with symptoms the diag-

nosis is usually rendered quite easy by microscopic examination of the discharge, but in sub-acute and chronic cases this is not so easy—in fact, is quite impossible in most instances. Therefore, in the more advanced cases, we must rely upon the clinical findings and diagnosis by exclusion.

The chief symptoms to be relied upon are the history as to exposure, etc., irritated reddened areas of the vulva, evidences of Bartholinian infection, erosions of the cervix which bleed easily and are associated with muco-purulent discharge, slightly enlarged uterus, and tender tubes. Many of these cases suffer with pains in the iliac region and show a slight rise of temperature during menstruation.

Turning to streptococcus infection, we find that, unlike the gonococcus, it penetrates the walls of the uterus, and attacks the connective tissue. Thence it often spreads into the peritoneum, and produces peritonitis, which is usually fatal. Occasionally it may happen that the streptococci extend directly from the uterine cavity into the peritoneal cavity by way of the tubes, but such cases are exceedingly rare, and are also usually fatal. If they survive the attack, and later present themselves for examination, it will be found in practically every case that the pelvic connective tissue has become involved in the process.

In this connection the experiments of Whiteside and Walton are particularly interesting. They attempted to produce salpingitis in rabbits by injecting into the uterine cavity pure cultures of streptococci, and in some instances mixed cultures of streptococci and staphylococci. Not a single case developed salpingitis. One, however, died of streptococcic septicemia, while the others developed a purulent vaginitis for a few days. Those that recovered subsequently became pregnant and bore litters. It has been demonstrated that nearly all streptococcic masses in the pelvis are parametrial in whole or in part. The parametrial mass is usually situated in the base of the broad ligament, low down, is very hard and dense, and appears to blend with

all the structures with which it comes in contact.

Streptococci do not spontaneously invade the non-puerperal uterine cavity, but in nearly all instances can be directly traced to labor, abortions, or intra-uterine manipulations. A striking phase of streptococcic infection is that, unlike gonococcic infection, the virulency tends to persist indefinitely, even after the case has become quiescent and normal temperature has supervened. The point is fully substantiated by Miller, Martin and others. Miller reports two cases with virulent streptococci, one of six years and the other of twelve years duration, while Martin has demonstrated active streptococci in a pelvic mass of nineteen years duration. Crossen says that automatic sterilization of a streptococcic abscess is perhaps possible, but it is so rare that it cannot be counted upon.

From the foregoing, it is quite evident that we have at hand certain factors which if taken into consideration will be a material aid in the differential diagnosis between gonorrheal and streptococcic infections in chronic pelvic inflammation. If the surgeon could know before the operation what class of infection he was dealing with, an enormous advantage would be gained, inasmuch as the surgical treatment for the various pelvic infections differ most widely. Of course, differential diagnosis is not possible in all cases, for rare forms of infection, and some few mixed and border-line cases, will defy the most acute diagnostic acumen, in the present state of our knowledge. However, by close attention to two points which have been magnificently elaborated by Dr. H. S. Crossen, of St. Louis, to whom I am indebted for many of the ideas contained in this paper, we have a practical and fairly efficient index to the differential diagnosis of these two chief offending micro-organisms, in chronic pelvic infection, viz: the gonococcus and the streptococcus.

The two diagnostic points referred to are, first, the history and apparent cause of the trouble; second, the character and location of the lesion. In every case, the most pains-

taking inquiry as to cause and onset should be instituted, followed by a most careful pelvic investigation, under anesthesia if necessary. In the gonorrheal cases, the history will be one of old gonorrhea with its usual manifestations. Perhaps evidences of the infection about the vulva and cervix may still be present, or a history of the trouble coming on without apparent cause is almost equally as significant as the history of an old case of gonorrhea. An unaccounted-for inflammation beginning in the vagina or uterus and extending into the tubes and pelvic peritoneum is almost certainly gonorrheal. A purulent leukorrhea coming on shortly after marriage is quite suggestive. The historic significance of such symptoms as frequent burning urinations, abscess of the vulvo-vaginal gland, and vulvitis, need no discussion here. In certain mild cases, the first intimation of trouble may be a salpingitis. In examining these cases, one should use extraordinary care not to overlook an earlier abortion or some intra-uterine manipulation. It has been shown that about 25 per cent of puerperal infections are due to old or latent cases of gonorrhea. Such cases are usually mild, and when without positive evidences of gonorrhea, must be decided upon by the location of the lesion. The history in practically every streptococcic case dates back to labor, abortion, miscarriage or some intra-uterine interference.

The second point, viz: character and location of the lesion, has already been discussed. It may be well, however, to again call attention to the tubal or tubo-ovarian mass situated high up and laterally, or perhaps prolapsed into the cul de sac, as typical of gonorrheal cases. The mass is usually separated from the uterus by a groove, and is usually not very dense. In streptococcic cases the mass involves the connective tissue most usually in the base of the broad ligament or the cervico-cellular tissue, is very dense and hard, and seems to blend with all the other structures with which it comes in contact.

Attention to the above mentioned points will undoubtedly be of assistance in deter-

mining the proper operative procedure to be instituted in given cases. Streptococcic cases should be operated upon by the extra-abdominal route, either beneath Poupart's ligament, or per-vaginum. Intra-peritoneal operations in this class of cases should only be undertaken when the patient's life is jeopardized, and the mass cannot be reached in a less dangerous way. Cases approached by the abdominal route for supposed other infections, and found upon examination to resemble the streptococcic type, should be closed and operated on from below. In gonorrheal cases of some months' duration, there is little or no danger of infection, no matter how approached. Nearly all cases of sterile pus in the pelvis were originally gonorrheal in character.

In conclusion, allow me to say:

First—That the pus in the majority of cases of pelvic suppuration is sterile at the time of operation, hence there is little danger of infection in this class of cases. The time required for automatic sterilization in gonorrheal cases is approximately four months; therefore, gonorrheal infection should not be subjected to surgical interference until sufficient time has elapsed to insure their sterilization.

Second—That of the micro-organisms producing chronic pelvic inflammatory masses, the gonococcus and the streptococcus constitute the vast majority, the former being by far more prevalent.

Third—That the history and apparent cause, as well as the lesions resulting from these two micro-organisms, is essentially different, and that where proper attention is paid to these details it will be found possible in a large number of cases to determine the infecting micro-organism before operation.

Fourth—That the treatment of gonococcic and streptococcic infections in chronic pelvic inflammatory masses is widely different, and that where streptococcic infections are suspected, the greatest possible care should be exercised in protecting the peritoneal cavity.

CALCIUM SULPHIDE.*

BY M. A. BLANTON, M.D.

BAILEYTON, TENN.

The writer will present no excuse for this brief resume on calcium sulphide other than the seeming neglect of this valuable agent both by text-book writers and the general practitioner of medicine.

Calcium sulphide is a chemical combination or mixture in which calcium sulphate is the base and sulphureted hydrogen the active agent. A good specimen should contain at least 30 per cent of this active agent.

The dose ranges from 1-6 to 1-2 grain repeated every half to two or three hours as the case may demand.

It rapidly decomposes on exposure to the air, which accounts for the fact that we frequently find it inert. There is enough oxygen in the air of a tightly corked, partially full container to spoil the top layer, so that the next prescription is filled from inert calcium sulphate. Strictly fresh calcium sulphide should be put into a coated pill or granule, whereby the full strength of this very valuable agent is retained. When calcium sulphide is taken internally, the patient's breath and skin soon emits the odor of sulphureted hydrogen, also eructations of the same gases occur. It is thus demonstrated that this salt is decomposed within the body, and that sulphate of lime and sulphureted hydrogen are formed. The former is inert and passes off with the feces, the latter is absorbed into the blood and principally eliminated by the skin and lungs.

Sulphureted hydrogen acts in some way as a systemic antiseptic, particularly in the treatment of zymotic diseases, either neutralizing the products of their bacilli, or by stimulating to great activity the white blood corpuscles, and thus greatly enhancing their phagocytic properties. It probably, in certain conditions, completely destroys the bacillus. Further, the action of the medicine upon the glandular structures of the respiratory and intestinal tracts produces

an increase of secretions, and in this way eliminates morbid materials from the blood.

Some authors claim that anemia is produced by the disintegration of the red blood corpuscles through long continued use of the sulphides. However, this particular effect need not be considered in the treatment of acute infectious diseases, because of their short duration.

In the treatment of pertussis, rubeola, scarletina and erysipelas, the writer has given this agent continuously in doses ranging from one-fourth to one-half grain over periods ranging from two to five weeks with entirely good results.

In my opinion this remedy should be given throughout the entire course of rubeola, pertussis, scarletina, variola, erysipelas, follicular tonsilitis, quinsy and diphtheria. However, antitoxin given early and in large doses is the sheet anchor in the treatment of diphtheria, calcium sulphide coming in secondarily.

In the treatment of follicular tonsilitis the sulphide of calcium acts almost as a specific, and in twenty-four hours there is often very marked improvement, if not a cure, particularly in mild cases. Adults should be given one-half grain in coated pill or fresh solution every hour until there is marked amelioration or until the sulphureted hydrogen evolving becomes so disagreeable as to produce nausea. The dose may then be given every two hours.

In acne with formation of pus, or when abscesses form in successive crops, few remedies are as valuable in aborting or in curing these conditions. To abort pus formations anticipate the formations by giving calcium sulphide, said Ringer and Merrell.

In bronchitis of the larger tubes, in capillary bronchitis and in phthisis, when sputum is tenacious and ropy and the cough hard and prolonged, calcium sulphide liquefies the exudate and makes coughing easier.

In chronic abscesses of the middle ear, in inflammatory conditions of the urinary tract, where pus is found in the urine, whether its origin is found to be in the kidneys, bladder or urethra, rapidly saturating

* Read before Greene County Medical Society.

the blood with repeated doses of one-half grain every two hours will often effect a cure.

I use calcium sulphide as a routine in the treatment of most zymotic diseases, other remedies being used as indicated.

Dr. Shaller tells us that this valuable agent will act similarly to antitoxin when administered in the treatment of contagious diseases of childhood by increasing the inherent power of the blood to destroy the bacteria and their poisons. This he claims is done by stimulating such blood glands as the thyroid, spleen, suprarenal capsule and the lymphatics. Of this I am a little skeptical.

And now let me say, in closing, that the mission of this short paper is to stimulate a more scientific study and general use of this valuable therapeutic agent and not to impress you that I look upon it as a panacea.

DYSTOCIA.*

BY S. S. DUGGAN,
EAGLEVILLE, TENN.

Mr. President and Gentlemen of the Rutherford County Medical Society:

Having been appointed to read a paper on Dystocia, I will do the best I can on this great subject.

I am satisfied I will be unable to present the subject as it should be. We are making history, you and I. The spirit of progress is at last breathing new life into medicine, more especially into those most neglected yet most important branches of it.

In all the learned professions and in all the fields of scientific research we see great advancement and new developments. Questions heretofore dark, beclouded and uncertain, have been stripped of mystery and doubt, and have been stamped with bright and beautiful realities. We now glean in all the scientific fields and gather the refined and ripened harvest of thought and adopt it to our everyday needs.

Wonderful and astonishing as the past may appear, there is a constant unfolding

of new ideas, new methods and new applications of science in all the learned fields of thought and applied scientific development to purposes of utility. The eager grasp of the new in all branches of learning shows what mighty forces are operating and are being used for supremacy. And in none of the professions is there a greater or more clearly marked advancement than in that of medicine.

The busy and conscientious practitioner never attains such knowledge that he cannot learn and be greatly benefited by association with his professional brethren.

There are, of course, many reasons why medical societies have been organized, but, to my mind, two very important ones are first, the benefit in point of information to the practitioner himself; second, the benefits realized by the people in the community in which he labors. It is up to the physician to do the best he can at all times for the good of humanity. Therefore, I come before this society, not to teach *you*, but that I, myself, may learn something.

I will present to you the subject in a brief and condensed form, merely giving an outline of the various causes and discussing some of the most important ones.

Dystocia is painful or slow delivery at birth.

(1) Fetal dystocia, that which is due to the shape, size or position of the fetus.

(2) Maternal dystocia, that which is due to some deformity on the part of the mother.

(3) Placental dystocia, that which is due to difficulty in removing or delivering the placenta.

In a normal labor the active forces of expulsion (the uterine and abdominal muscles) and the passive forces of resistance (the fetus, the pelvis and the maternal soft structures) are so nicely balanced that the expulsive forces are just sufficiently resisted to insure a slow and gradual passage of the fetus along the birth canal.

The walls of the birth canal and the structures around the vulvar orifice are, by this arrangement, slowly and gradually dilated, and are not rudely torn apart, as

*Read before Rutherford County Medical Society, August 30, 1911.

they would be by a more rapid expulsion of the fetus.

This balance between the powers of labor, however, is easily disturbed, and this disturbance is called dystocia.

ETIOLOGY.

(1) Deficient power of the uterine muscle in labor. This may be due to a defect of the muscle itself, to some anomaly of innervation, or to a mechanical interference with the full and effective action of the muscle. The uterine muscle may be exhausted by rapidly succeeding pregnancies.

(2) The uterus may be overdistended by twins or by hydramnios, thus losing the power gained by cohesion of the muscular bundles.

(3) The uterus may be weakened by an adynamic fever or wasting disease, which weakens the whole organism; but it does not necessarily follow that uterine weakness always accompanies a reduction of body strength.

(4) The uterus may be weakened by profuse hemorrhage, as in placenta previa.

(6) The liquor amnii having drained off completely early in the first stage, the uterus retracts upon the child's body, and that portion of the uterine wall which is subjected to the long continued pressure of the fetus becomes anemic and friable, while the area free from the pressure becomes congested, swollen and edematous.

(6) Above all, the uterine muscle may become fatigued.

(7) Still, inertia may appear in consequence of any serious obstruction in labor.

(8) Anomalies in the conjunction of the pelvic bones, such as (1) rachitis, (2) osteomalacia, (3) new growths, (4) fractures, (5) atrophy, (6) caries, (7) necrosis.

DIAGNOSIS.

The recognition of uterine inertia should always be easy. The contractions of the muscles are of short duration and are usually separated by long intervals and by palpation the observer may convince himself that they are feeble. The uterus during the pain does not assume that intensely hard consistency which normal, vigorous action

of the muscle in labor occasions. The patient's expression, actions and demeanor point to deficient force during the pains. The woman is more placid. The fact is less contorted. And there is less outcry during the contractions than in the normal parturient patient, except in those rare cases where excessive pain inhibits uterine action. In such cases, however, abdominal palpation and short duration of the pains are sufficiently plain signs of the inertia. Finally, labor is delayed. One fatal error in the diagnosis of inertia uterii should be avoided. The physician should be sure that labor is not delayed by some obstruction. It has happened, in a careless and superficial examination, that the observer has taken the distended and thinned lower uterine segment for an inert womb. In such a case the measures adopted to stimulate the supposedly inactive uterine muscle to overcome an obstacle that is insuperable, might easily be interrupted by rupture of the womb. A methodical and careful examination will guard one from this error. The firmly, perhaps tetanically contracted upper segment may be contrasted with the inactive lower segment by palpation of the whole anterior surface of the womb.

From the diversity of the causes of inertia it follows that no single plan of treatment can be depended upon.

If excessive pain prevents effective contractions, an analgesic should be administered, fifteen grains hydrate chloral, repeated in fifteen minutes if necessary, or one-fourth grain morphine sulphate hypodermatically.

If the uterine muscle is apathetic, it can be aroused by an irritant. The insertion of a bogie, as far the induction of labor, answers the purpose well. Dilatation of the cervical canal by Barnes' bags. These bags not only irritate the uterine muscle, and thus bring on contraction, but they also artificially dilate the cervical canal and relieve the uterine muscle of a great part of its task in the first stage of labor.

Inertia uteri, so profound as to demand the somewhat radical measures just described, is rare.

More often the physician sees the minor grades, in which there is simply a flagging of the uterine effort during the first stage, and more especially is this true in primiparae, and it is usually accompanied by every evidence of temporary physical and mental exhaustion. Many remedies have been recommended for this purpose, but of them all alcohol, quinine and ergot alone deserve consideration. Ergot, at one time, was extensively used, but clinical experience forbids its use today, since the uninterrupted contractions of the womb induced by it are liable to become tetanic. In the use of alcohol and quinine in my own practice I have frequently gotten what I consider good results.

MODERN TONSIL SURGERY.*

BY WALTER DOTSON, M.D.,
GALLATIN, TENN.

The faucial tonsils have required and received surgical procedures dating as far back as our surgical history goes.

The tonsil operations have been almost as many and varied as the tonsil operators.

Only two operations will be considered or discussed in this short paper, viz: (1) Tonsillotomy, which is an amputation of the tonsil, or the removal of a part of the tonsil by some one of the many surgical operations which have been in vogue for many years, and I am sorry to say, it is yet practiced by many eminent surgeons in middle Tennessee, as well as the South at large. (2) Tonsillectomy, which is a complete removal of the entire tonsil, together with its capsule. This operation is frequently called enucleation of the tonsil. This may be done in mass, or piecemeal, but means the removal of the entire tonsillar tissue. The operation of tonsillectomy has been introduced and performed by some American surgeons for the past twelve years. Tonsillectomy was first performed in the United States, and no doubt the origin of it belongs to one of the five throat surgeons of Chicago, who claim to be the origi-

nator. As far as I can learn, Tonsillectomy has only been introduced in the South for the last four or five years, and it is now only two years since our European brothers have taken kindly to it. We would, therefore, speak of modern tonsil surgery as tonsillectomy, and will briefly compare the operations, complications and results of the two operations of tonsillotomy and tonsillectomy.

Tonsillotomy, or amputation of the tonsil, is easily and quickly performed. It is usually done with one of the many tonsillotomes found on the market, one or more of which are to be found in most every physician's equipment. Tonsillotomy is also performed by the use of knives, scissors, and tonsil snares, both cold and electric.

The operation consists in grasping and cutting off the protruding portion of the tonsil, which happens to extend toward the median line beyond the borders of the tonsillar pillars. In some cases a large mass of tonsillar tissue, in fact, most of the tonsil can be removed in this way, while in others only a very small amount of tonsillar tissue, even though the tonsils are very much enlarged, is removed. This slice off the protruding part of the tonsil, familiarly called "clipping the tonsils," is a tonsillotomy, and frequently is all that can be accomplished by the operation. Every tonsillotomy leaves a stump either large or small. This stump is usually diseased, as was the entire tonsil, and it can be readily seen the results of the operation are not what should be desired. In fact, the only result we can expect from a tonsillotomy is the partial removal of the mechanical obstruction in the throat.

The complications of hemorrhage and sepsis are both more common in tonsillotomy than in tonsillectomy. The stump of the tonsil which is left, being lymphoid tissue, will not contract down on the ends of the bleeding vessels as will the muscular wall of the throat after a tonsillectomy. The broad fresh cut surface of the stump in tonsillotomy is a standing invitation for lodging and developing infectious bacteria.

Should the tissues of the stump be sound, it will be in a position to reproduce itself.

*Read before Middle Tennessee Medical Association, Gallatin.

It may grow and enlarge until it is again as large as the original tonsil.

Removing part of a diseased or enlarged tonsil is similar to removing part of a diseased vermiform appendix, or to breaking off the crown of a decayed molar that is producing a toothache.

Ninety per cent of tonsils that need removing have had many inflammatory attacks which has produced strong adhesions between the tonsils and the tonsillar pillars. We find both the anterior and posterior pillars grown to the tonsil, and as the tonsil inflames and grows it drags the pillars in with it toward the median line. When this condition is found (and it usually is) we could not expect to gain much by any operation, except a complete tonsillectomy.

There are many different methods, anesthetics, positions and instruments used in doing a tonsillectomy, but I will describe only one method here, which I consider to be the simplest, surest and safest of any, and one in which I have followed closely for four years, and believe my brother physicians of Gallatin will testify with a great degree of success.

In adults I use cocain and adrenalin as a local anesthetic, which I mop on and around the pillars and tonsils for several times before operating. I do not inject this solution into the tissues with a needle, as it is very dangerous. Seven deaths have already been reported this year from tonsillar injections.

The upright position in a dark room is always used unless we use a general anesthetic.

One assistant is necessary to steady the patients' head and to hold the tongue depressor.

The tonsil is seized with strong-looking tonsil forceps and is drawn forward and outward toward the median line. The pillars are then dissected free from the tonsil all the way around by the use of sharp curved knives or sharp curved double cutting edged scissors, being careful that the dissections are complete and that the muscular pillars are not wounded. This pillar separation is the most important part in

the operation. When they are completely separated back to the tonsillar capsule, they will retract similar to a prepuce as traction is made on the tonsil forceps. Strongly adhered pillars cannot be separated by dull separators, but must be carefully dissected by sharp instruments.

The pillars should not be wounded, as they bleed profusely when cut across, and then an avenue for infection would be produced.

When the separation of the pillars down to the tonsil capsule is completed, we then pass the loop of a No. 8 cold wire snare around the tonsil and push it well back on the tonsil, between the pillars and at the same time make traction on the tonsil forceps while the snare wire is being closed around the base of the tonsil. The snare wire should be tightened and forced home through its canula slowly and steady. When this is correctly done, the snare does not cut the tonsil or anything else except the nerves and blood vessels which supply the tonsil, but simply dissects the tonsil out in its capsule by dull dissection, or rather peels or shells it out, by taking the course of least resistance, which is between the fibrous tonsil capsule and the muscular wall. The tonsil is then removed from its bed by the tonsil forceps which have remained on it during the snareing. The tonsil should be carefully examined at once to find the fibrous capsule enveloping it and to make sure that the entire gland has been removed. The tonsillar fossa should also be examined and the pillars trimmed of any tags that may be adhered to them.

The other tonsil should be removed at once by the same procedure.

We rarely see an alarming hemorrhage following this operation, as the muscular fibers contract on the ends of the cut vessels which close them nicely.

Small children should have a tonsillectomy done under general anesthesia. I prefer to start the anesthetic with ethyl chloride and if necessary to continue the anesthetic more than five minutes, change to ether.

The position in this case is on the right

side, level on the operating table, with a sand bag under the neck.

The same operation as described above is done here, with the addition of the mouth gag, and gauze sponges with which the assistant must keep the blood thoroughly mopped out of the throat, and the uvula drawn away from the tonsil being operated upon. Care should be taken that the uvula does not fall in the loop of the snare and be removed with the tonsil when operating under a general anesthetic.

THE PRESENT STATUS OF X-RAY IN GENERAL DIAGNOSIS AND TREATMENT.*

BY HAZLE PADGETT, M.D.

NASHVILLE, TENN.

Electricity has won for itself a place on the pinnacle of medicine secure, firm and impregnable, and its usefulness and efficiency in diagnosis and treatment is only denied by the ignorant and prejudiced. The field is too great to discuss in all of its phases, but I have selected that part that pertains to the present status of X-ray in general diagnosis and treatment as a topic to present to this association in the few minutes allotted for the presentation of subjects. As interesting as that fact is, I shall not discuss the history of X-ray, but will state that it has long, long ago left the realm of the impractical to become a true handmaid to the surgeon, internist and therapist, and it is not an exaggerated statement to make that it is an indispensable agent for the surgeon, internist and therapist.

In the history of all medicine science has never furnished the surgeon with such a means in diagnosis of many forms of surgical affections, and the fear has been expressed that as the X-ray diagnosis is of such practical and easy use that the young surgeon will form the habit of relying upon it to the exclusion of other means and methods that are reliable in their way. Many have thought and even now may still

think that the use of X-ray is practically confined to the diagnosis of fractures, dislocations and the localization of foreign bodies, and while this is a most important part of its use, and for one who has not kept up with the progress made in its use in several departments, the rest of the story is a most enchanting one. Its use in the diagnosis of foreign bodies, fractures and dislocations is well-known, and was the primary use of X-ray in medicine, but as the years have passed many facts have been added to our knowledge of the osseous system. By its use a much more accurate knowledge of the ossification of and union of the epiphysis with the diaphysis has been discovered. One fact after another has been added till now such conditions as fractures of all grades and varieties, osteitis, periosteitis, tumors, exostoses, tuberculosis, necrosis and caries, osteomalacia, syphilis, bone deformity and joint deformity, and while it is difficult yet in a number of instances can torn ligaments, periosteum and tendons be shown. The dental surgeon has a true friend in X-ray in determining unerupted teeth with their position and also diseases of the maxillae.

The best known means for the diagnosis of stone in the substance of the kidney, in the pelvis, ureter and bladder is the X-ray, and it is not an exaggeration to say that every kidney expecting an operation should be skiagraphed. While the surgeon has utilized extensively the X-ray, yet its use is not confined to his atmosphere, for the internist has many claims. The use of the X-ray in the diagnosis of early tuberculosis of the lung is attracting considerable attention on the part of those who have made it a study. Various stages of the disease can be studied by this method and such conditions as solidification and cavitation are well known. The size and position of the heart is made known. Aneurysms in different parts of the aorta are revealed. The size and position of the stomach are shown. The fluoroscope is one, if not the best known means of detecting the exact size and outline of the liver, and even certain diseases of the liver can be detected, but

* Read before the Upper Cumberland Medical Society, May, 1911.

gall-stones offer little hope of detection, but occasionally they are found. Sinuses and fistulous tracts are revealed by the well-known bismuth paste method.

While I have had much to say about diagnosis by means of the X-ray in its several methods of application, yet the therapist has an indispensable agent for good and cure in the use of the X-ray therapy. Every one who has had to treat lupus vulgaris must have felt at times the hopelessness of all means till the use of the X-ray revealed the fact that a very large per cent of cases of lupus vulgaris or tuberculosis of the skin are cured by X-ray therapy, and personally while I would not be so rash as to tell a patient with tuberculosis of the skin that X-ray will cure the condition, yet I feel that that patient will get well under X-ray therapy. Lupus erythematosus does not afford the uniform good results as in lupus vulgaris, and yet it is well to treat cautiously every case with X-ray. The use of X-ray therapy in early epithelioma is almost a specific, and taken early, very early, I always feel that recovery will follow. Personally speaking no patient in the operable stage of carcinoma should be kept waiting to see what X-ray therapy will do, but operate and then use X-ray, and its use after the operation is a very important feature in the treatment of carcinoma.

Here I wish to stop long enough to speak of the use of X-ray in the inoperable cases of carcinoma and in recurrent cases where the patient is suffering the characteristic pains. The anaesthetic properties of X-ray was long ago noticed, and in such conditions of which I speak X-ray has proven to be a great boon to many of the poor sufferers who reached long, long ago the morphine stage and yet, under the anaesthetic influence of the X-ray, these patients are often made comfortable without the disagreeable effects of opium. In many instances the anaesthetic influence of X-ray is wonderful. Parasitic diseases, like tinea tonsurans or ringworm and fevers, will yield to the influence of radiation.

Tuberculous glands and ulceration are benefited and cured, and in certain localities should be so treated before the resort is made to surgery. Tuberculous glands in the neck are markedly influenced by X-ray therapy, and does not leave a scar, that certainly is a state to hope for. Pruritus ani, pruritus vulvae and prurigo respond well, and in many instances like magic. Keloids and multiple warts will melt away like a fading shadow. While I have seen in other parts of the world many cases of leprosy in its various stages, but have had no opportunity to test X-ray therapy in this disease, yet it is stated in reports from the Orient that radiation does help the disease. There are a number of definite and indefinite cutaneous diseases that are responsive to X-ray therapy, and among the number I wish to mention two, chronic eczema and psoriasis. The acute manifestation should not be exposed to its influence, but there are many cases of chronic eczema resisting everything else that will yield to X-radiation, and many chronic ulcers of different natures having resisted every treatment used will yield magically to X-ray. In discussing X-ray therapy one must not overlook other conditions than local ones, and I wish to speak of exophthalmic goitre and leukaemia. Every case of leukaemia should be X-rayed as a part of the therapy of that disease. Many cases of exophthalmic goitre are benefited and, in fact, X-ray therapy should be added to the medical armamentarium of the internist in the treatment of this disease.

A certain number of epileptics are improved by X-ray therapy. It is not known how, but the fact is recognized that improvement comes in some cases where all other means have failed.

In this discussion of the subject I do not presume to be exhaustive, and I have left much unsaid that might be of interest in a fuller discussion of individual diseases, but I trust that I have stated sufficient information to be of practical help in selecting conditions suited for X-ray therapy.

PNEUMOTHORAX.*

BY JOE CLIFTON, M.D.,
HICKORY VALLEY, TENN.

Pneumothorax is a rare condition, or possibly overlooked oftentimes; but if one comes in contact with a case, it impresses him.

I have only seen one case so far, and my consultant, who has had a wide experience, says it is his first case to observe. I do not care to discuss this condition, but ask to report this case, which follows:

Patient—M. L., male, age 34, occupation farmer, in October, 1910, was carrying a basket of corn on his shoulder, when he was seized with a severe pain in the back between scapulea, extending to sternum on level with nipples.

Examination—Arriving a short time after patient was taken, found labored breathing, patient badly excited and pale, complaining of pain in back and extending to chest. Pulse 90, good volume, temperature normal, left side of chest did not expand normally, slight cough, respiration 30, patient sitting up. Gave Hoffman's anodyne, put blister over pain and had patient to go to bed.

About four hours afterwards was called back and found all symptoms above noted, but more marked.

Percussion over left side gave a tympanic note, no dullness over region of heart. Auscultation; respiratory murmur and voice resonance, absent over left side of chest, apex beat was found on the right side of sternum on level with nipple, 2 inches to inner side, breathing over right lung was not quite normal.

Over left lung could be heard amphoric breathing and a decided metallic tinkle, plainest below left nipple, also a sound as if fluid was dripping into a cavity containing fluid. Now gave hypo morphia. Saw patient next day; all symptoms present. Gave five grains iodide potash every six hours and one-fourth grain codein, as needed, to quiet patient. Dose of calomel on second

night, as patient's tongue was coated, bad breath and loss of appetite.

Saw patient every day until October 8, when had a consultation. Consultant did not suggest to change treatment nor did he make diagnosis, this being the first case either of us had seen, we gave a grave prognosis. On the 9th of October, at night, was called to see the patient. Found him restless, delirium, temperature 102. Gave codein, one-fourth grain, hour apart for three doses, which quieted patient and rest was good remainder of night. Patient improved after this and withdrew all medicine on the 12th of October except codein, which was given as needed. The apex beat began to return towards its normal position, and on the 25th of November it was in normal place.

Previous History—Father and mother living, T. B. and syphilis negative. In 1904 patient had pneumonia, right side, delayed resolution, followed by an empyema, consultant operated for this; drew two or three gallons of fluid; recovery slow.

What I consider to be the most noticeable points in this case is the displacement of heart, and it remaining displaced for about fifty days and returning to its normal position.

THE RELATIONSHIP OF FOOD TO
DISEASE.*

BY E. A. TIMMONS, M.D.,
COLUMBIA, TENN.

Mr. President and Gentlemen:

That food is one of the main features in the transmission and development of disease is a fact undenied by the informed upon the subject. However, the various ways by which food figures its evil results seemed not to have been isolated and classified according to the ideas of the essayist.

All organic matter, living or dead, is a food for its respective preying species, and all living matter is a disease to that life upon which it preys, so that such a disease

* Read before Tennessee State Medical Association, April, 1911.

* Read before Tennessee State Medical Association, April, 1911.

is but the feasting of one organism upon another.

Thus, with that general definition, man, himself, from that viewpoint is a disease. Why not? Upon life depends death and upon death depends life. Without life there could be no death, and without death there could be no life. Just as man preys upon life that brings death to his victims, so other organisms prey upon man that brings death to him. And in it all we can begin to see the truer relationship of food to disease.

From the simplest up to the highest type of living organisms, all are endowed with certain offensive and defensive features for self-sustenance and preservation. When we go out into the floral realm of nature and see the many low forms of vegetable life self-endowed with thorns and thistles, bitter and poisonous juices, etc., for a protection against an evil invasion, and that when we come up to the fauna world and see the numerous ways by which animal, fowl, reptile and fish life is protected, we can begin to reason that the ptomaine and toxine poisons of the micro-organisms are their, "*so to speak*," floral thorns and thistles, their bitter and poisonous juices, or their fauna armament for self-protection and preservation, while they feast upon their prey. Thus, again, strictly and scientifically speaking, such a disease is the feasting of one organism upon another during the life of the latter. Hence, the crowd who ate the turtle and hind legs of bullfrogs in the morning and made the still living frogs hop on their fore feet and the turtle's head snap that afternoon, was so much a disease to those living organisms as are any germs that may invade our bodies. The crowd was larger and quicker in action. That's all.

We cannot help from beholding and appreciating the fact that even all living nature, in varying degrees, is clothed with that offensive and defensive armament for its self-preservation. The most of this armament comes from a struggle for food. In the pursuance of life for food is where we all fall a victim to death, and inasmuch as all life is in such a race for an existence, it is no reason for us to give up in despair.

It remains for the medical profession to increase the armament against the invasion of other organisms feasting upon the living human bodies. Such an armament may require an innocent systemic inoculation to us of a little "bitter and poisonous juice," against the invasion of some of our would-be feasting enemies or some other "thorn or thistle" against others. But the point is, while we feast upon life for our existence, let us strive to develop more safeguards and to put up what safeguards we have against other life-feasting upon our living bodies; so that in the end, we may all come out as "the survival of the fittest," with our allotted "three score and ten," and then some more years upon that.

It has been scientifically calculated (and the essayist thinks that the figures can be corroborated) that eliminating the effects of feasting organisms upon the human body and placing it under suitable environments, man is now born with sufficient vitality to average an age of three hundred and fifty years. This average vitality might be improved in the course of time, under favorable conditions. There is no question that the shortening of man's life is due not to a lack of properly endowed vitality, but to the ravages of pathogenic organism and the effects of bad environments upon his constitution.

Of course it is not within the domain of this essay to discuss the evil effects of extreme cold or heat or sudden temperature changes, chemicals or poisons, etc., upon the human economy further than they are naturally entered into in connection with food, and to say that such things do predispose to various organisms by lowering the vitality of tissue cells for the invasion of many pathogenic organisms. Subjected to a predisposition by any or all of those conditions, the human organism is made a fertile field for the entering of preying life upon it through the medium of bad foods and drinks.

As the essayist wishes to discuss the human body as the victim and its food as the cause of disease (and as he has already intimated), he will confine his essay

practically to that field of work. The relationship of food to disease has its kinship in several general classified ways.

First—The disease-producing germs may be active upon certain foods that we eat. When we take these foods into our system the germs may lay hold directly upon certain tissue cells prepared to receive them. Then our body has to bear a two-fold burden; first, the complete destruction and devouring of its own tissue cells, and, second, the toxins to be eliminated by their victim.

This is, as a rule, the most serious malady that can effect the human body. Many such infections are malignant and quick, others continuous and slow but fatal in their termination, while others are self-destruction to themselves and thus are limitive in their course upon the patient. This self-destruction of a disease is what suggested, brought out and is still bringing out the antitoxin and serum treatment for various diseases. Many of the continuous and eruptive fevers, etc., belong to that class of infectious diseases that may be transmitted by food.

Second—There are other foods infected with germ life that do not lay hold directly upon the human tissue cells, but which are treacherous and dangerous to the human economy. There are the germs that seem to thrive better upon our food when such food is within our alimentary tract. Becoming more active and virulent upon their food in such an environment, they rapidly eliminate a malignant ptomain poison that is absorbed into and taken up by our system and that may prove fatal unless they are speedily flushed out. We frequently meet with these maladies in many of our known summer complaints.

Third—There is a class of adulterated foods that are destined to no little evil. These are the disguised foods of many manufacturing and dispensing dealers. Even some public eating places work the game not infrequently. To conceal the taints of infection and to brighten up some foods, various chemicals may be used. These chemicals may or may not sterilize the food. If they do, there is the evil of the

chemical used for the body to bear; and if they don't, there is the injury of both the chemical and infection for the constitution to be burdened with, to say nothing of the bad effects of a lack of proper nutrition in either case. Here is a food evil that may rapidly or insidiously cause an evil preying upon the human body. This condition of affairs was obviously brought out in the heavy fight waged against certain manufacturers and dealers by the city of Philadelphia not long since. And such an action pursued by other cities might be worth while for the preservation and lengthening of human life. But such a course should be pursued with caution, painstaking and an actual knowledge of the condition and composition of such foods and their real effects upon the human body for the good of humanity and not for the advantage of political factions or parties.

Fourth—There is a large class of foods that are not of the adulterated or infected variety, but are inefficient from a lack of many or all of the necessary properties for a normal physiological nutrition. This class can be divided into two classes: first, those foods that are naturally lacking in such nutritive properties, and, second, those foods that have had many such properties extracted by commercial houses to enter into other and highly nutritive products for the market. While that class of inefficient food does not effect the human system in the same way that the other injurious foods spoken of do, yet its effect is very insidious. On account of the lack of necessary nutrition, the body cells become impoverished, which invariably leads to two evil results: first, it brings about an early or premature senility of the whole human organism, and, second, it lowers the constitutional vitality for the invasion of ravaging organisms and their evil results. Some of this class of foods that had much of its nutritive qualities extracted for other food products, was surprisingly encountered and experienced with by our Government during the Spanish-American War. Most of us should remember the non-nutritive foods that were palmed off on our soldiers by a certain

packing house and the quick evil results that these faulty foods lead to in camp life. It demonstrated that the human body demands its full proportion of good, clean nutriment for health and normal vitality, and that all our food houses should be properly guarded. If life could subsist thrivingly on just any old thing, with or without the proper nutritive properties, there would be absolutely no excuse for the Irishman's thoroughbred steed starving to death when the Irishman had gradually worked his mixed bran, oats and sawdust up to all sawdust as a matter of economy and for saving expense which food tampering extracted all of the necessary nutriment for the horse. Hence, we see that the foods which do not supply all the necessary nutriment to the body must be supplemented with those that will, and all foods that are for nutrition must not have any of their necessary nutriment extracted (for other purposes) and put on the market as nutritious foods.

Fifth—We have a class of foods that the essayist has never seen any one else classify with reference to their nutriment in their relationship to disease. We have had some of this food all along, but this class is becoming quite a commodity (?) nowadays, especially in large cities. And here is where the essayist is going to step on many toes, and may elicit some discussion. It is cold storage products, especially of long standing. Of course, cold storage foods may be found in any one of the four classes that the essayist has mentioned, but now he wishes to isolate another class that can occur out of cold storage, but a class that cold storage furnishes the bulk of. It is a class that is not germ-infected, neither is it nutritive extracted, nor has it been chemically adulterated. It is simply a class of food that age and cold storage have robbed from its original full vitality and nutritive properties; and hence, it cannot impart the tone and vitality to human cell life that the fresh vegetables, fruits and meats have and can give. Did you ever eat any real long cold storage vegetables, fruits, eggs or meats and notice what a flat and non-appetizing taste they all have and what a cloudy

effect they produce upon your mind just afterwards? If you have eaten such food without observing those ill-effects, it is because you are used to them and cannot compare your condition to better environments. You should go to the country for a few months or some other place and eat such food fresh and untainted from the hand of Mother Nature, and you will soon see where you have been faking yourself with an illusion. Food that has lost its own cell vitality is not and cannot possibly be as invigorating and as healthful to the human body as is the fresh and pure product. The life energy is not in the food cells to be imparted to the living body cells. That is the reason. And the further we remove our food from the freshness of its original state the more near related such food becomes to disease in the various ways discussed.

Sixth—We have a class of foods that may come within the domain of either one of the foregoing five classes in its relationship to disease, and except for one point that the essayist wishes to make and emphasize, he would not isolate and classify these foods separately from the other classes. I refer especially to the cereals. There is a close analogy between the outer coating of the cereals and that of man with reference to the fundamental elements that go to make up such tissues. The husk of the grain is more affected with fungus or vegetable cell disease than most any other kind. This is a case with reference to many human skin diseases, and perhaps ill-affected or musky cereal food figures more prominently in causing dermatological maladies than any of us at first imagined. These evil conditions might be brought about in not less than two ways; first, by diseased cereal food itself, and, second, by the use of bolted grain as food. In both instances the proper or normal proportion of nutritive properties of the food are lacking, and inasmuch as the greater proportion of food for the human skin is in the husk of the grain, you cannot expect anything else save a skin starvation, when you remove most of its required nutritive elements from the daily food. Hence, from such a starved-out con-

d'tion, the ravages of dermatological maladies lay easy hold upon an impoverished skin, either by course of infected food or by direct external infection. Perhaps pellagra is nothing more than an evolved fungus or vegetable cell cereal disease existing and thriving under a new environment.

Seventh—Inasmuch as many beverages are not only foods, but play a high hand in their relationship to certain diseases, this essay would be incomplete without touching upon them in a general way. The essayist refers to the soft drinks, not hard drinks, but the real genuine soft drinks! These drinks, like the cereals, are also included in the first five classes in those various ways in their relationship to disease. But the extravagant, modern indulgence in them require that they be given a separate classification for a proper treatise. Eliminating any germ infection, adulteration or lack of nutrition, and coming to that they are absolutely free, fresh and according to formulae, yet they are proving an insidious but obvious evil upon our people. It is in this way. Every digestive system can only utilize just so much of its required and necessary nutriment. When you feed beyond that point, you temporarily exhaust the digestive ferments and leave the digestive system burdened with food and nothing with which to digest and to protect the surplus food from putrefaction. Now, when you take into your system daily much soft drinking, you should remember that you are usually taking not less than one ounce of syrup with an average glass of such drinks. With the amount of other food that a person generally eats and assimilates, there is not much daily ferment left to utilize many additional ounces of syrup. So that an excessive ingestion of these beverages call upon the exhausted ferment glands for what they have not on demand. And if such an excess is kept up, much nervousness and a general debility will result. There is no doubt with the essayist but that the excessive indulgence in soft drinks have produced and are producing more physical, nervous and mental wrecks than all the beers and malts ever did or ever will do,

because the latter does not draw near so heavily upon the digestive ferments, but are more near akin to food digested and ready for assimilation than are the soft drinks. Mother Nature is her own legislature, her own judiciary and her own executrix. She has made excess a crime. For intemperance in anything, she assesses the penalty and executes the same. She has put too much intaken food and drink in a close relationship with disease. Men may grow fanatical and attempt to abolish things because they are abused, or used to excess, but Mother Nature will come right along in her cool, deliberate way, finds us using something else to excess, and slaps "What fools ye mortals be."

Eighth—We come to our final classification of foods in a general way, which constitutes the pure, fresh, unadulterated, or untainted nutritious varieties. Their relationship to disease is naturally negative, and if they did not figure so prominently in the cure, eradication or amelioration of diseases, that class of foods might be omitted from this essay. The role that class plays to life has already been intimated. For when the vital cell action is below par either from germ invasion or merely a lack of sufficient nutrition, those fresh foods can not help from imparting to the impoverished body cells much of their own restored nourishment, vitality and energy, so that to a declining constitution this proper food nutrition is not to be overlooked or neglected. The proper proportion and required nutriment (as already stated) for all of the body tissues is to be found in the whole of the cereals and the meats. Our early ancestors lived and thrived to better health upon the whole of their foods, and to the best interest of our life and health, we must get back to the whole of our foods and not depend so much upon foods with most of their necessary nutriment extracted, bolted or wanting from other causes. The dairy cows that are constantly fed bran (the husk of the cereals) have the finest and most healthy skin and suit of hair. Why? Because in the outer covering of the cereals are found most of the elements necessary to undisk

and feed the skin and its appendages. When such milchers are given their necessary proportion of the other parts of the cereals they make the finest milk and butter producers of any of their kind. In fact, good food and proper treatment will make thoroughbreds out of bad breeds, will make healthy stock out of much feeble stock, and what is true with reference to the lower types of animal creation in the food line, is a fact concerning the highest type of animal creation, man. Hence, we have seen that food has its relationship to disease either to produce or to correct it, and that such a condition of the food used and the manner of using it.

In conclusion, from the general classification of foods in their relationship to disease we cannot help from seeing the need and appreciating the fact of our Government taking steps to guard the purity of the foods for its people. This is a step for the pro-

tection and preservation of human life. It is an act that every American should feel an interest in and should help to sustain. It is a boon to health that each manufacturer and dealer ought to help carry out with pride. The health and happiness of all are a protection blessing to each, and national health is so interwoven that the health of each individual must be protected to guard well the health of the Nation.

DISCUSSION.

Dr. G. B. Gillespie, Covington—I think this paper is of as much importance as any paper we have had read before the association at this meeting. I have been impressed for some time as to the causes of indigestion, and, as the essayist has pointed out, canned foods, cold storage foods, lose their nutritive power, and under conditions of lowered vitality they cause disease. I think there are a great many diseases of the digestive organs caused entirely by these foods.

Dr. Timmons (Closing)—I wish to thank Dr. Gillespie for the remarks he has made. I have nothing further to say on the subject.

THE JOURNAL

OF THE

TENNESSEE STATE MEDICAL ASSOCIATION

Devoted to the Interests of the Medical Profession of Tennessee

Office of Publication, Jackson Building, Nashville, Tenn

FEBRUARY, 1912

EDITORIALS**WHO IS WHO IN THE NATIONAL
LEAGUE FOR MEDICAL FREE-
DOM?**

To explain why the National League for Medical Freedom opposes the work of the American Medical Association, the Journal A. M. A. (Dec. 23, 1911, p. 2091) tells us something about the officers of the league. From this we take the following:

B. O. Flowers, Boston: President and one of the founders of the league. Flowers is ex-president of the R. C. Flowers Medicine Co., a mail-order medical fake, founded by the notorious quack and swindler, R. C. Flowers.

C. W. Miller, Waverly, Ia.: Second vice-president of the league. Miller publishes a newspaper which advertises many nostrums. While in the Iowa legislature Miller is said to have been an opponent of public health measures.

Reynold E. Blight, Los Angeles: Chairman Southern California branch of the league. Blight's name appears in connection with the "Nature Aid Health Utilities Company," which does a mail-order business.

Charles Wentworth Littlefield, M.D., Seattle, Wash.: Chairman of the Washington branch of the league. Littlefield exploits the "Twelve Devitalized Tissue Builders," which are to be used "in curing all mental and nervous diseases."

Frederick Wallace Abbott, M.D. (F. S. Sc., London), Taunton, Mass.: Member of the advisory board of the league. The degree, "F. S. Sc., London," may be purchased from a London concern for \$5.

C. S. Carr, M.D., Columbus, O.: Member of the advisory board of the league. Carr

has been in the employ of the Peruna concern for years. He is editor of a pseudo-medical sheet. Carr does a mail-order medical business of his own, selling what he calls "tissue remedies."

George P. Englehard, Chicago: Member of the advisory board of the league. Englehard publishes two journals, which have long defended the "patent medicine" interests and which have carried advertisements of some of the worst frauds.

Charles Huhn, Minneapolis: Member of the advisory board of the league. Huhn was president of a co-operative "patent medicine" concern, known as the American Druggists' Syndicate.

A. F. Stephens, M. D., St. Louis: Member of the advisory board of the league. Stephens has been second vice-president of the Converse Chemical Company, a St. Louis nostrum concern.

It is the duty of every member of this association to write to Senators Taylor and Lea and urge their cooperation and support in the passage of the Owen bill. Also write to your Congressmen and get their support. Show them you are interested in the bill and tell them who are opposing it.

**INADEQUATE COMPENSATION TO
COUNTY HEALTH OFFICERS.**

Fifty-two new county health officers were elected by the county courts at the January term in eighty-two counties. Fourteen counties have not been heard from by the State Board of Health.

The county health officer is a most important unit in the public health service, which can never reach the highest state of efficiency until each county is willing to pay its health officer enough to justify him in giving the necessary time and attention to his work as a public servant. In some of the counties in Tennessee the county health officer is paid considerably less than one hundred dollars a year. Further comment on this condition of affairs is unnecessary, except to say that it is believed that no better investment could be made than that necessary for decent compensation of

health officers. It must be remembered, though, that even were the remuneration of these officials all that could be desired, efficient service could not be had without the co-operation of the physicians. One of the obligations imposed upon a physician receiving license to practice is that he shall observe the provisions of all laws made for the protection of the public health. The Hippocratic Oath makes like demand upon him. Tennessee needs a better public health service, and the men engaged in this work are anxious to have it. None can help more than the doctors, and one way to help is to report promptly to your county health officer.

DR. BILLINGS' VISIT TO NASHVILLE.

Doctor Billings, the distinguished teacher and practitioner of general medicine, came from his Chicago home to speak to the Nashville Academy of Medicine, on "Systemic Disease from Local Focal Infection." The meeting (January 16) was largely attended, and the closest attention was given Dr. Billings while he read his paper, the outgrowth of much investigation in his large hospital service. The Academy was delighted to hear him, and it will be long before his address will be forgotten.

The whole paper was based on clinical observations of the sick and experimentations on lower animals. The parts especially emphasized by him as being foci of infection were the pharyngeal tonsils, adenoids, the nasal mucous membrane, the appendix, the prostate gland and the teeth and gums, but he also made it clear that other parts could become foci of general infection. He gave the history of many cases in which the general disease was the result of focal infection, but laid special emphasis on arthritis and pericarditis. The larger number of the cases reported seemed to have been caused by infection through the tonsil, the germ in many, if not most cases, being the streptococcus. Many of the joint cases proved very rebellious, and appeared almost incurable until the tonsils had been removed. The statements made by Dr. Billings about some of these cases "would

have been taken with grains of salt," if they had been made by a throat specialist, but coming from him they were received as a revelation of truth.

In referring to the appendix as a focus of infection he declared that he is now a stronger advocate of operative work on this mischievous organ than many of the surgeons.

In one part of his great address he mentioned the accepted fact that, through diseased mucous membrane of the nose, the germ of cerebro-spinal meningitis finds its entrance into the general system.

The paper will soon be published, probably in the *Journal of the American Medical Association*. It will be extensively and appreciatively read, and every reader will be helped by its clear and forceful teaching. The members of the Nashville Academy are hungering for it, because of the foretaste given in its brief presentation.

G. C. S.

FINAL VINDICATION OF DR. WILEY.

The Congressional Committee, technically known as the Committee on Expenditures of the Department of Agriculture, to which the charges against Dr. Harvey W. Wiley and his administration of the Bureau of Chemistry were referred, has submitted its report not only completely exonerating him, but recommending that Congress enact such additional laws as will render further obstruction of the work of the Board impossible. It is a relief to know that the matter is thus formally and officially closed with a verdict which reflects popular judgment as unmistakably expressed from the beginning.

There has probably never been an official investigation of a Federal office which aroused such universal interest. On the one side were the people whose welfare was vitally at stake; on the other "the interests" making a last desperate stand to retain control of the situation regardless alike of public health and statutory restrictions. One of the most significant features of the whole affair was the practical unanimity with which the press of the country rallied

to the cause of right and justice. This would not have occurred ten, or even five, years ago, and is striking evidence of the benefits which have followed the awakening of public interest in health matters. Today lay publications, voicing, without fear or favor, independent and enlightened views on all matters affecting the welfare of the public, constitute the most powerful influence in the nation's life.

Personally Dr. Wiley required no further vindication than he had already received at the hands of the people and, later, by means of the emphatic letter of President Taft to Secretary Wilson which resulted in a reorganization of the Bureau of Chemistry and the establishment of Dr. Wiley's unquestioned and untrammelled authority as its executive head. It is gratifying, however, that the official inquiry instituted by Congress places on record a report which should effectually silence his traducers and ultimately bring about even more far-reaching benefits from the enforcement of the Pure Food and Drugs Act.

A. B. C.

LIQUID SULPHUR.

When ordinary sulphur, lime and water are boiled together there results a solution of calcium sulphide which has a rich golden yellow color, and a foul, rotten-egg odor. First introduced to medicine under the title of Vleminkx's solution, it appears to have been very attractive to patent medicine exploiters because of its rich color and powerful odor. In reporting the analysis of "Sulphume" (J. A. M. A., Nov. 25, 1911, p. 1853), the A. M. A. Chemical Laboratory notes that this solution has been variously exploited as sulphume, sulphurine, golden lotion, yellow lotion, liquid sulphur, and soluble sulphur, and has even been admitted to the National Formulary under the title of liquor calcis sulphuratæ. The chemists discuss the almost charmed existence which certain nostrums lead and hopefully say:

"While we are afraid its disgusting odor will continue to be a strong 'talking point' for the stuff, let us hope that in due course of time the public will learn the fallacy of

the old idea that anything that is nasty in taste or odor must be 'powerfully good medicine.'"

The report of the work for the eradication of hookworm disease for 1911 shows greatly increased results over the report for 1910. Both in the numbers of microscopical examinations and cases diagnosed the increase was very marked. Two hundred and sixty-eight physicians in the State reported cases treated. About six hundred specimens were examined at the office of the State Board of Health, one hundred and twenty-eight of them containing the ova of the hookworm, and the eggs of other intestinal parasites were found many times. This certainly shows the necessity for a hygienic laboratory for the State Board of Health, a laboratory where examinations for the diagnosis of diphtheria, typhoid fever, gonorrhea and other diseases might be made for the doctors of the State. It is hoped that an increased number of physicians will send specimens for examination for hookworm disease this year. A letter is being sent to every doctor whose address can be obtained asking that each of them send four specimens from those in whom hookworm disease is suspected for examination during the present quarter. Mailing tubes will be sent to any address upon request, and the examinations will be made without cost.

A number of specimens have been received at the office of the State Board of Health with no mark by which it might be told from whom they came. Of course, the findings after microscopic examination could not be reported.

Fewer outbreaks of smallpox have occurred in the State this winter than for many years. This is due in part to vaccination and in part to the reduction of the supply of human material for infection, because of the great prevalence of the disease among the unvaccinated during the last few years. While the disease has been generally of a mild type, an occasional death has served to emphasize the necessity

for vaccination of every unprotected person. A few physicians in the State make a practice of vaccinating every new born child under their care in the early weeks of its life. This is a safe and sane practice, which ought to be more widely followed.

Tennessee has been particularly fortunate in escaping outbreaks of epidemic cerebro-spinal meningitis, such as are now reported in Texas. Quite a number of isolated cases of this disease have occurred in the State, but in only one instance has the disease been reported in the epidemic form, this having been in one of the Middle Tennessee counties in 1911. Prompt measures instituted by the county health officer, after consultation with the State Board of Health, resulted in the quick suppression of the disease, which had occurred in a number of laborers in a very fatal form.

The University of Tennessee, Medical Department, Memphis, announces a Department of Tropical Medicine. Dr. William Krauss has been selected to teach this important subject. There can be no question that the subject has been much neglected in our Southern medical colleges, and we are pleased to see the establishment of chairs to teach tropical medicine in several of our more progressive universities. The University of Tennessee is to be congratulated upon the selection of Dr. Krauss, and no one who knows him will doubt his ability to head a department for which he is so thoroughly fitted.

We are pleased to see so many of the component societies throughout the State endorsing Dr. Lucius Brown. The State Society, through its officers, sent a communication to Gov. Hooper thoroughly endorsing Dr. Brown early in January.

DEATHS

ROBERT H. TATUM, M.D.

PREAMBLE.

Dr. Robert H. Tatum, born July 19, 1873; died at his home in Chattanooga, January

18, 1912, aged 38. Taken away in the very prime of his manhood and in the midst of his professional activities, he will be most sadly missed. There has probably never been a more popular member of this society than Dr. Tatum, and he has been repeatedly honored by election to its offices. He first became our Secretary in March, 1897, and so well did he fill the office and so economically and agreeably did he administer its duties that re-election came in



1898 and 1899 and again in 1900—four successive years of splendid, self-sacrificing work for the society. In March, 1901, he was elected Vice-President, and again to the same office in March, 1903. During 1904 he was our President, and his banquet given at the Union Depot on January 15, 1904, is still remembered as one of the most pleasing occasions ever enjoyed by the local profession. Such was his official connection with the society—a record no other member has equalled.

Until sickness quite recently compelled his close confinement at home, he was a most constant attendant at our meetings,

an ever willing worker, and always a great factor tending to a perfect harmony and cordial good will one to another. He was agreeable and most courteous in discussions, and prompt and efficient in the rendition of his contributions. Never even a suspicion of unethical conduct has been breathed against him, and he has said naught against any other. In this particular he has left a model for us all to emulate—a forgiving spirit, a charitable disposition, a broad-minded view of those situations that do necessarily frequently arise.

Dr. Tatum was an energetic physician, a hard worker, one who arose early and worked late, one who derived an enjoyment from his practice and at the same time made it a financial success. He was charitable and indulgent, and the public and his clientele have lost a valued counsellor and friend and do sadly mourn their loss.

He was a native son of Tennessee, born in the county of Cannon, in the little city of Woodbury. Graduated at the University of Tennessee on March 22, 1894, and secured his Tennessee license on February 28, 1895, when aged 22. This same year (1895), on November 15, he joined this society. He was affiliated at the time of his death with the Tennessee State Medical Association, the Southern Medical Association and the American Medical Association.

He served as teacher at the Chattanooga Medical College for a long period of time, and later became the Professor of Physiology. Here he proved to be a splendid instructor, prompt in his appointments, popular with the student body, and always commanded their respect and confidence. The alumni will pause to reflect and mourn and speak a word of sincere eulogy. During his long service on the staff at Erlanger Hospital he was always most attentive to the duties there imposed, ever faithful to his trust.

RESOLUTIONS.

Therefore be it Resolved, by the Chattanooga Academy of Medicine and the Hamilton County Medical Society, That we deeply deplore the death of Dr. Robert H. Tatum, one whose life has exemplified all

the qualities of the upright and ethical physician, one who has always been a most worthy and valued member of this society, and whose memory we hold in sacred veneration.

Resolved, That we tender his bereaved family our sincere sympathy and condolence.

Resolved, That a copy of these resolutions and preamble be sent to the family of the deceased, a copy furnished the Journal of the Tennessee State Medical Association for publication, and a copy be spread upon a separate page of our record book.

H. P. LARIMORE, M.D., Chairman.

GEO. R. WEST, M.D.,

J. J. GEE, M.D.,

C. HOLTZCLAW, M.D.,

W. G. BOGART, M.D.,

J. S. B. WOOLFORD, M.D.,

H. BERLIN, M.D.,

GERMAN P. HAYMORE, M.D.,

Committee.

Passed January 26, 1912.

FRANK TRESTER SMITH, M.D.,

President.

H. L. FANCHER, M.D., Secretary.

Dr. Joseph A. Rogers, of Leeville, Tenn., aged 71 years, died of heart failure January 11. Dr. Rogers was one of Wilson County's most prominent physicians having practiced medicine in this county for forty-one years. He is survived by his wife and two children.

Mrs. J. W. Morton, wife of Dr. J. W. Morton, died at her home in Nashville, January 21, aged 51 years. The remains were taken to Chapel Hill, Tenn., their former home, for burial. The deceased is survived by her husband and two sons.

Dr. J. H. Hudson, one of the most prominent physicians of Lincoln County, died January 28 in a Nashville infirmary, where he had been under treatment for some time. The remains were taken to Fayetteville January 29 for burial.

NEWS NOTES AND COMMENT

Dr. Thompson Anderson passed through Nashville en route to New York.

Mrs. L. E. Burch, of Nashville, presented the doctor with a fine baby boy.

President Broyles has returned from Miami, Fla., where he spent several weeks.

Dr. E. W. Jenkins, of Brush Creek, and Dr. D. D. Houser, of Lafayette, are doing post-graduate work in New York.

Dr. R. H. Baylor was re-elected County Health Officer for Houston County.

The Masonic Grand Lodge, which has been in session during the last week of January, participated in the laying of the cornerstone for a new infirmary to be erected at the Masonic Widows' and Orphans' Home at Nashville. We are informed that this infirmary will cost \$5,000, and will, no doubt, be of great benefit to this very worthy institution.

Quite a number of the men in the Maryville and Elizabethton companies of the National State Guard have requested that they be given anti-typhoid virus, and Adjutant-General Maloney promises that it shall be administered to them. It is compulsory in the War Department, but optional with the State Guards, and these particular companies are to be congratulated upon their good sense in taking advantage of recent scientific advancement in the prevention of this disease.

Dr. J. B. Murfree is seriously ill at his home in Murfreesboro.

Dr. B. T. Nolen was recently elected County Health Officer for Williamson County.

Dr. B. C. Dodds, of Gravel Hill, and Dr. James N. Gray, of Arlington, recently moved to Huntingdon. The former will be

associated with Dr. A. J. Lancaster and the latter with Dr. W. M. Wright, both prominent physicians of that place.

Dr. and Mrs. A. L. Sharber sailed February 3 for Europe, where the doctor will do post-graduate work in the larger hospitals of Continental Europe.

Dr. I. B. Cox was elected County Health Officer for Carroll County to take the place of Dr. W. M. Enochs, deceased.

Dr. J. L. Walker was elected County Health Officer for Henry County to succeed Dr. A. A. Oliver, whose term has expired.

Dr. E. Y. Napier, of Waverly, who has been County Physician for Humphreys County for the past twenty-five years, was re-elected by the County Court by acclamation.

Dr. R. P. Beasley, formerly of Centerville, is now located in Pinewood, Tenn.

Dr. C. A. Abernathy, of Pulaski, was in Nashville on January 25 and paid the Journal a visit.

Dr. Frank Billings, of Chicago, addressed the Nashville Academy of Medicine at its regular meeting January 16. His subject was "Focal Infections in Relation to Systemic Disease." It is needless to say that the subject was handled in a masterly manner, and that he made a splendid impression upon all who heard him.

Dr. Billings was the guest of Dr. John A. Witherspoon while in the city.

Predigested beef is the foundation of Nutrient Wine of Beef Peptone, a palatable and serviceable liquid food. To protein and carbohydrates are added the stimulating properties of meat extractives. The physician will be pleased with Nutrient Wine of Beef Peptone in cases where the patient's stomach will not appropriate ordinary diet and where the digestive organs demand rest or assistance.

SOCIETY PROCEEDINGS**CHATTANOOGA ACADEMY OF MEDICINE AND HAMILTON COUNTY MEDICAL SOCIETY.****SECRETARY'S REPORT FOR 1911.**

Chattanooga, Tenn., Dec. 29, 1911.

Mr. President and Members of the Society:

The year just closed has been without doubt the best in the history of the society. We feel sure you will agree with this statement. The attendance has been indeed splendid, and the meetings without exception most interesting and instructive. The local essayists have done themselves proud in the preparation of splendid papers, many of which have graced the pages of the Southern medical journals. Each meeting you have been furnished a program "worth while," and have met with no disappointments by reason of absent essayists. This in itself is a fine record for any society to emulate.

You have frequently heard our visiting essayists assert that this society was "the best in the State," and other similar complimentary terms. We might at first have regarded such statements as fulsome flattery, but being so often repeated and with ever increasing emphasis, we are literally forced to believe with them and enjoy that distinction. This creditable showing is due to the interest taken by the individual members, together with your officers giving their very best efforts.

OUR VISITORS.

We have been honored as never before with the presence on the floor of the society of many most prominent out-of-town physicians, some of national distinction. Included in this number have been the following: Drs. Cohen, Hobart A. Hare and John H. Musser, of Philadelphia; Drs. Hektoen, Isaac A. Abt and Greenfelder, of Chicago; Drs. Chas. A. L. Reed and M. L. Heidingsfeld, of Cincinnati; Drs. H. W. Wiley, L. F. Kebler, Morgan, Emery, Fuller, Salant, Hale and Tom A. Williams, of Washington; Dr. John W. Mallett, of the University of Virginia; Dr. Wm. F. Boos,

of Boston; Dr. Victor C. Vaughan, of Ann Arbor; Dr. Osmond, of Yale; Dr. Smith, of Dayton, O.; Drs. Stewart Roberts, Michael Hoke, Wesley E. Taylor and Willis F. Westmoreland, of Atlanta; and Drs. E. M. Sanders, Wm. Litterer, Perry Bromberg and Olin West, of Nashville. The presence of these gentlemen attracted large audiences, and the meetings were of great interest and value.

The working out of the details of these large meetings has been no small task. The expense has also been considerable, as you will note from my report as treasurer. Regardless, however, of these increased expenses we close the year with a larger surplus than we began with. All your accounts are paid, even to the smallest item, and I may safely say your credit is rated first-class. We believe the increase of dues from \$4 to \$5 has met with the approbation of the entire membership. If this increase had not been made the year's work just ended would have been curtailed no little. All the legitimate publicity possible has been given to the society and its work. Your programs, your notices of meetings, and especially your notices of special meetings, have been given a wide circulation among the profession of this entire section. The work of the secretary-treasurer is becoming more and more arduous and necessitates a great deal of time and thought. Therefore, I would advise that as soon as your finances will permit, you should pay him a salary or vote him a bonus even if no more than \$25 a year.

LIST OF NURSES.

Your list of nurses was revised for printing only once this year in order to save expenses. These lists seem to fill a real need, for they are in constant use and demand.

OUR MEETING PLACE.

This has been "moving year" with the society. Our old hall on Broad street became vacant on June 1, and we moved with the Chamber of Commerce to the fourteenth floor of the Hamilton National Bank Building. The location did not quite seem

to satisfy, and all were glad to accept on October 13 the kind offer of the Manufacturers' Association to use this home-like and comfortable room. The expenses here are merely nominal—the janitor is paid 50 to 75 cents per meeting night, and the lights will not run over 50 cents each meeting.

SOCIAL FEATURES.

Social features enjoyed during the year were a buffet lunch at the Read House, on March 17, in honor of Dr. Hobert A. Hare and other numerous prominent visiting physicians. Present were 74 members and 26 visiting physicians. A reception was tendered the society by Erlanger Hospital, on March 24. Present were 58 members and 18 visiting doctors. Receptions were tendered by President Atlee to Dr. Wesley E. Taylor, on June 30, to the nurses on August 18 and to Dr. I. A. Abt of Chicago and others on October 20. On December 1 the society was tendered a reception by the Drs. Newell at their sanitarium. Needless to remark all these social gatherings were enjoyed to the utmost and were greatly appreciated by all.

ANNUAL DINNER.

The annual dinner was held on January 13 at the Hotel Patten, with 55 members, 9 visiting physicians and 5 laymen present. The plates were \$1.50 each, each one attending paying for his own plate. The banquet committee arranged an elaborate affair, including an orchestra, soloist, a vaudeville artist, moving pictures, etc., and everything was most successfully carried out and immensely enjoyed. This committee labored most earnestly to make it a success, and submitted a statement showing an expenditure of \$35.75 above receipts. Your treasurer defrayed from your funds \$18.50 to cover the orchestra and postage account. The committee was still left with \$17.25 to pay out of their own pockets. I submit that a repetition of this should be avoided, for the banquet committee does enough work without being put to this individual outlay of cash.

STATE SOCIETY MEETING.

The Tennessee State Medical Association

will meet in this city next April. The best meeting in its history is predicted. Already Drs. John H. Musser and J. Webster Fox of Philadelphia have signified their intention of being present, and a provisional acceptance received from Dr. E. S. Judd of Rochester, Minn. Others may later accept the invitation of Secretary Bromberg. A rare scientific treat for the full three days of the meeting is in prospect. Your local committee on arrangements will need funds to entertain this association, and it is earnestly hoped that the profession will respond liberally, that Chattanooga's fame for hospitality may be thereby enhanced.

ATTENDANCE.

During 1911 fifty-one regular meetings were held, with a total attendance of 1,760. This gives an average attendance of members of 34 1-2. (The average attendance last year was 29 1-3.) There were 212 visiting physicians attended our meetings during the year. One called meeting was held, it being to arrange committees for the funeral of the late Dr. W. A. Duncan. The smallest attendance of members at any one meeting was 16, on April 28; the largest was 74 members, on March 17. Five of the membership missed less than five meetings throughout the year, as follows: Dr. H. L. Fancher missed but 4 meetings, Dr. F. T. Smith missed but 3, Dr. J. W. Macquillan missed but 2, while President Atlee and your Secretary were present at all the meetings. All other members missed to exceed five meetings.

A memorial meeting was held on May 12, in memory of Drs. W. A. Duncan and J. Q. Sutton. Beautiful tributes were paid to their memories, and resolutions of sympathy passed. The nurses met with the society on August 18, resulting in a most interesting meeting. At this meeting there were present 45 members, 11 visiting physicians and 46 other visitors, mostly nurses from the hospitals. A meeting on September 15, arranged for our dentist friends, resulted in an attendance of seven dentists and a good meeting.

We began the year 1911 with 112 mem-

bers and close with 121 members, a net increase of 9. (Last year we had a net increase of 5.) Seventeen new members have been elected, as follows: B. C. Hale, Guild, Marion County, Tenn; J. T. Bell, of Daisy, Hamilton County, Tenn.; J. M. Selden, City; L. C. Williamson, of East Lake; J. E. Hanna, City; B. G. Allen, City; L. W. Spradling, City; Bayard Sullivan, City; Carl R. Martin, City; George F. Ryan, City; Jos. A. Richmond, of Harrison, Hamilton County, Tenn.; J. B. Haskins, City; Willard Steele, City; M. D. Davis, City; Leopold Shumacker (now at Madison, Wis.); A. F. Hill, of Mt. Junction, and H. Quigg Fletcher, City.

Four (4) members have moved or been transferred, as follows: J. H. Murphey, Walter Lenehan, J. Lanski and John Capell. One has been dropped for non-payment of dues—Dr. H. K. Bearden, of East Chattanooga. Two (2) members have died—W. A. Duncan on May and J. Q. Sutton on May 12. One resigned—Dr. N. May Waite.

Therefore, as stated, while 17 new members were elected, yet the net increase has been nine (9), and the roll-call contains at present 121 names.

Respectfully submitted,
H. P. LARIMORE, Secretary.

TREASURER'S REPORT FOR 1911.

Receipts.	
Balance on hand January 1, 1911.....	\$63 63
Collected from members—dues.....	532 00
Total	\$595 63
Disbursements.	
1911.	
Jan. 3. 1,000 letterheads	\$ 4 50
Jan. 16. Annual dinner expenses	18 50
Feb. 3. 500 Secretary-Treasurer reports ...	3 00
Mar. 4. 700 nurses' lists	3 75
Mar. 4. 2,000 envelopes	4 75
Mar. 16. 750 programs	24 75
Mar. 16. 500 membership lists	5 50
June 7. Floral emblems for Dr. Duncan and Dr. Sutton, at \$10.00 each.....	20 00
Aug. 7. 500 letterheads	3 25
Dec. 21. 375 membership certificates for 1912, 1913, and 1914	13 00
Mar. 13. Mailing programs, nurses' lists, first lot Dunn letters and invitation let- ters	14 12
Mar. 20. Printing 250 circular letters, Dr. Heidingsfeld	2 50
Mar. 24. Printing 200 circular letters, Dr. Heidingsfeld	2 00
Apr. 6-8. Printing 250 circular letters, Dr. Chas. A. L. Reed	2 75

Use stereoptican, \$5.00; expert elec- trician, \$5.00; incidentals, \$1.00; Dr. Reed's meeting; total.....	11 00
Postage for meetings of Drs. Heid- ingsfeld and Reed	6 72
June 2. Printing and postage, Dr. Michael Hoke's meeting	2 85
July 3. Printing and postage, Dr. Wesley E. Taylor's meeting	2 75
Sept. 7. Printing and postage, Dr. Perry Bromberg's meeting	3 50
Oct. 16. Printing and postage, Dr. Willis Westmoreland's meeting	3 90
Nov. 25. Postage, last lot of Dunn letters....	90
Hall rent, 6 months, to Chamber of Commerce, \$50.00; 3 months Ham- ilton Nat. Bank Bldg., \$25.00; total	75 00
Postals used throughout year.....	54 55
General postage throughout year...	6 54
Incidentals—pens, 15c; date stamp, 15c; 50 Constitutions, 50c; rubber bands, 20c; newspapers, 10c; Dr. Sutton's resolutions, 50c; blank pa- per, 70c; phone girl answering phone four meetings at Bank Bldg., \$2.00; phone toll, Dr. Atlee to Dr. Taylor in Atlanta, 90c; sponge, 10c; telegram to Miss Plewess in Canada, 60c; card in- dex cards, 25c; moving black- board from Bank Bldg. to present location, 50c; large envelopes, 10c; messenger fees, 30c; ink, 35c; tel- egram Dr. Wallace to Dr. West- moreland in Atlanta, 25c; porter tips, 5 c; postal card "shower" to Dr. G. R. West, 80c; phone toll, Secretary to Dr. Olin West, 75c; janitor, Oct. 13 to date, \$6.75; lights for hall, Oct. 13 to date, \$2.75; total incidentals	19 20
Remitted to State Society through- out year, representing nine re- mittances	202 00
Total disbursements	\$516 28

Leaving balance on hand Dec. 29, 1911.....\$ 79 25

Four (4) members are in arrears for dues for 1910 and 1911 and will be dropped for non-payment of dues on the first day of the new year. Fourteen (14) members still owe dues for 1911.

Respectfully submitted,
H. P. LARIMORE, Treasurer.

GIBSON COUNTY.

The Gibson County Medical Society held its annual meeting in Trenton, January 16, 1912.

There was a good attendance, considering the weather and condition of the roads.

After the address of the retiring President, Dr. B. T. Bennett read a paper on "Tuberculosis in Cows." Dr. J. C. Moore presented a paper on "The Obstetric For-

ceps." Both papers elicited general discussion.

The following officers were elected for the ensuing year: President, Dr. B. T. Bennett; Vice-President, Dr. J. H. Rozelle; Secretary, Dr. W. C. McRee.

We are looking forward to the coming of Dr. McCormack on the first of February.

SIDNEY THOMPSON, M.D.

JEFFERSON COUNTY.

The Jefferson County Medical Society met December 5, 1911, with the election of the following officers:

President, Dr. W. L. Taldock, of Talbots; Vice-President, Dr. W. F. King, of Jefferson City; Secretary, Dr. B. M. Tittsworth, of Jefferson City; Treasurer, Dr. P. A. Tinsley, of Dandridge; Councillor, Dr. W. E. Roberts, of Talbots.

B. M. TITTSWORTH, M.D., Secretary.

WILLIAMSON COUNTY.

At the December meeting of the Williamson County Medical Society the following officers were elected:

President, Dr. W. W. Graham, College Grove; Vice-President, Dr. Sam White, Franklin; Secretary, Dr. K. S. Howlett, Franklin.

At the January meeting Dr. Dan German read a most interesting paper entitled "Report on a Case of Syphilis of Liver"—death—autopsy.

Dr. K. S. Howlett reported a case of syphilis contracted through a lesion on the hand.

K. S. HOWLETT, M.D., Secretary.

GREENE COUNTY.

The Greene County Medical Society met in regular session in the office of Drs. Fox and Taylor, Greeneville, Monday, January 1, 1912, Vice-President Dr. H. M. Taylor presiding, President Dr. J. B. Bell coming to the chair later.

On account of a very inclement day, we had no meeting on the first Monday in November, so the minutes of the meeting held August 7 were read and approved.

Dr. C. P. Fox gave a very interesting talk, the subject being "New Year Resolutions as They Apply to Doctors and the Greene County Medical Society."

Dr. J. W. Cloyd followed with a very interesting talk on "The Former Malignancy of Diphtheria and Its Easy Present Management Under the Use of Diphtheretic Antitoxin."

Dr. T. D. Cloyd's talk on "The Treatment of Tuberculosis" was timely and greatly appreciated by the society.

Dr. J. D. Campbell gave a most interesting talk on "The Institutional Treatment of Pulmonary Tuberculosis."

The following members were added to the society by a unanimous vote: Dr. E. A. Jeffers, Baileytown; Dr. W. M. Bright, Rheatown; Dr. J. D. Campbell, Tusculum; Dr. T. D. Cloyd, Mosheim; Dr. J. H. McClellan, Afton.

The following officers were elected for the year 1912: President, Dr. H. M. Taylor, Greeneville; Vice-President, Dr. J. S. J. Wilhoit, Afton; Secretary-Treasurer, Dr. M. A. Blanton, Baileytown.

Board of Censors—Dr. S. W. Woodyard, Greeneville, three years; Dr. R. O. Huffaker, Chucky City, two years; Dr. J. B. Bell, Greeneville, one year.

Committee on Program—Drs. C. P. Fox and S. W. Woodyard, Greeneville.

By a unanimous vote of the society, the time of our meeting was changed to the first Monday in January, April, July and October. The hour for meeting was set for 10 a. m. throughout the year.

There being no further business, the society adjourned to meet in the office of Dr. W. H. Hawkins on the first Monday in April.

After adjournment the society repaired to the home of Dr. C. P. Fox, where a most elegant repast was served.

H. A. BLANTON, Secretary.

HAMBLLEN COUNTY.

The Hamblen County Medical Society met in regular session January 9, with the election of the following officers:

President, Dr. T. E. Bales, Morristown; Vice-President, Dr. H. G. Pangle, Russellville; Secretary-Treasurer, Dr. W. E. Howell, Morristown.

W. G. RUBLE, M.D., Secretary.

BLOUNT COUNTY.

The Blount County Medical Society met January 1 and reorganized, with the following officers and members: President, Dr. J. P. Blankenship, Maryville; Secretary-Treasurer, Dr. M. M. Hannum, Maryville; Dr. B. E. DeLosier, Townsend, and Drs. J. A. McCulloch, E. L. Ellis and A. M. Gamble, of Maryville.

OVERTON COUNTY MEDICAL SOCIETY.

The Overton Medical Society met at Livingston, January 12, 1912. The following officers were elected:

President, Dr. Elmo Smith; Vice-President, Dr. Wm. Breeding; Secretary and Treasurer, Dr. A. B. Qualls.

Much interest was taken in the meeting. More enthusiasm was displayed than ever before.

Delegate to State Convention, Dr. Wm. Breeding; Alternate, Dr. J. T. McDonald,

Program for next regular meeting:

"Diphtheria, Importance of Microscopical Examinations in Suspected Cases," Dr. Wm. Breeding. "Acute Gastritis," Dr. A. B. Qualls.

A. B. QUALLS, *Secretary*.

DYER COUNTY MEDICAL SOCIETY.

Dyer County Medical Society met in regular session February 2, 1912, in the absence of the President, Dr. E. T. Haskins. Dr. Julian G. Price, First Vice-President, presided. In the afternoon session, a paper was read by Dr. J. W. Wayne with a report of a case of Cretinism and also Infantile Paralysis. Discussed by Drs. I. N. Rawles and Robert Mann; closed by Dr. Wynne. A clinic, "Osteomyelitis," by Dr. D. T. Austin; discussed by Drs. Mann and Austin. A clinic, "Syphilis," by Dr. R. L. Murph. Dr. Robert Mann, of Memphis, addressed

the Association on the use of "606" in the treatment and describing the technique and also demonstrating with a clinic.

Society adjourned to meet again promptly at 8 p.m. In the evening session, Dr. Frank A. Jones, of Memphis, addressed the Association on the use of Nauheim Baths in the treatment of heart and kidney lesions. A banquet was given at the Elks' Hall in honor of the visitors.

I. DULANEY, *Secretary*.

PUTNAM COUNTY.

The regular monthly meeting of the Putnam County Medical Society was held at Monterey, on the evening of February 1. The Society has been meeting at different places in the county since the first of the year, and finds this plan very satisfactory.

Doctor Shipley, of Cookeville, read a most interesting paper on "Acute Tonsillitis," which was discussed by Doctors Scott, Farmer, T. J. Moore, R. L. Ray, C. F. J. Hartung, J. O. Adams, and others.

Doctor Officer read a paper on "Lagrippe" which was discussed by most all present. Doctors Hartung, Dooley and Kirkland joined the Society at this meeting.

The next meeting will be held at Baxter, H. C. CURTIS, *Secretary*.

DR. MUSE ILL.

Dr. John R. Muse, of Lexington, Tennessee, a prominent and popular physician, is reported ill at the home of his brother, E. E. Muse.

MARRIED.

Dr. Cooper Thompson to Miss Annie Gray, January 25, at the home of the bride's aunt, Mrs. M. C. McCurdy, Nashville.

Dr. John Richard Moore, of Clifton, Tenn., to Miss Lillie Isbell, of Madisonville, Tenn., January 28, 1912.

AWARDED DAMAGES.

Miss Sarah Sappell, of Chicago, was awarded \$6,500 against a Northside Hos-

pital in Chicago, for burns of the foot which she suffered as a result of a hot water bag being left in the bed next the skin while recovering from an anesthetic, due to the carelessness of a nurse. The finding was an affirmation of a verdict of the lower court.

NOTICE.

The Committee on Scientific Program have decided that it is impractical to issue separate invitations for papers to be read at the meeting in Chattanooga, and take this method of extending invitations to the profession. The meeting promises to be one of the best in the history of the State, and the committee have invited a few men of international reputation to deliver special addresses upon some subject in their respective field.

Acceptances have already been received from Drs. Fox and Musser, of Philadelphia, and Dr. Judd, of Rochester, Minn. The preliminary program is now being arranged, and the committee respectfully urge that titles to papers be sent to Secretary Bromberg at your earliest convenience.

Remember that invitations in circular form will not be sent out. This notice is the method adopted, and we urge that you respond promptly. Synopses of papers, while not essential, are desired, and if you have any preference as to the selection of one to open the discussion, please indicate it and we shall make an effort to comply with your wishes.

PRELIMINARY PROGRAM.

"The Sliding Flap Operation for Cataract,"

By L. Webster Fox, M.D.,
Philadelphia, Pa.

Paper (subject to be announced later),

By J. H. Musser, M.D.,
Philadelphia, Pa.

Paper (subject to be announced later),

By Edward S. Judd, M.D.,
Rochester, Minn.

"Acute Anterior Poliomyelitis,"

By James H. Atlee, M.D.,
Chattanooga.

"Surgery of the Tonsil as Related to Chronic Diseases,"

By C. B. Wylie, M.D.,
Chattanooga.

"The Consideration of Some of the Haemolytic Factors in Sub-Tropical Anaemia,"

By W. Henry Cheney, L.M., M.D.,
Chattanooga.

"The Traumatic Neuroses, Due to Actual or Alleged Injury, From the Medico-Legal Standpoint,"

By Raymond Wallace, M.Sc., M.D.,
Chattanooga.

"The Treatment of Compound Fracture of the Long Bones,"

By S. R. Miller, M.D., Knoxville.

"Anaphylaxis,"

By Carroll G. Bull, M.D., Knoxville.

"Rupture of the Gall Bladder, With Report of Cases,"

By Battle Malone, M.D., Memphis.

"The Tonsils,"

By C. B. Jones, M.D., Knoxville.

"Intestinal Obstruction,"

By Richard A. Barr, M.D., Nashville.

A FINE LINE OF STERILIZED SOLUTIONS.

Hermetically sealed glass ampoules containing sterilized solutions of important drugs for hypodermic use have assumed a commanding place in medicine in a comparatively short period of time. Two or three years ago, seeing the tendency in this direction, Parke, Davis & Co. brought out a modest line of something like a half dozen formulas, notable among them being solutions of Adrenalin, Codrenin and Cacodylate of Sodium. From this small beginning the line has expanded until now the company announces a total of about twenty distinct formulas. The full list, we understand, is now appearing in display advertisements in the leading medical journals of the country. Physicians who are interested in this advance in hypodermic medication—and every physician ought to be—will do well to search out these advertisements and familiarize themselves with the comprehensive line of solutions therein

offered.

Solutions provided by the glaseptic ampoule, it is obvious, have several advantages over those prepared in the ordinary manner. They are ready for immediate use; there is no necessity to wait until water can be sterilized and cooled. Accuracy of dose is ensured, each ampoule containing a definite quantity of medicament. The solutions are aseptic; they are permanent.

AN INTERESTING CASE REPORT.

Mrs. Jane Griffis, of Bell County, Ky., has proven herself a true heroine. She is forty-seven years old, was married at fourteen and is the mother of fourteen boys, the youngest nine years old. Had twins once, the rest single births. Has had a complete prolapse of the uterus for eighteen years. She is a large, muscular woman and accustomed to hard labor. She had tried all kinds of local treatment and pessaries for the purpose of correcting the displacement, with no relief. She came under the observation of Mr. Boyd Baker, a third year student in the Medical Department of Lincoln Memorial University, who advised her to come to Knoxville for an operation, which she agreed to do.

She lives in the mountains of Eastern Kentucky amongst as primitive people as it would be possible to find anywhere. I will state here, however, that those of us who practice medicine and surgery in the Appalachian region find among these primitive people of the mountains a high degree of native intellect. They are chivalrous, true and courageous. They are also endowed with strong superstitions.

Mrs. Griffis is a woman of strong mind and as primitive as any. When she made up her mind to come to Knoxville for her operation she met with opposition and difficulties which would have discouraged most women who have had far better advantages of all kinds. Her family bitterly opposed her coming and all the neighbors for miles around begged her not to come. They told her the most gruesome stories of how they cut people up and assured her that she

would never get out alive. After they found they could not dissuade her from her purpose, they made arrangements for her funeral and told her they would send a wagon to the station to bring her body home and bade her a sad farewell.

In company with Mr. Baker, she mounted a mule and rode twenty-five miles across the mountains to get to the railroad and came on undaunted to Knoxville, her first trip to a city. I was asked to see her October 17, and found her with a complete prolapsed uterus and advised her to go to the hospital that day, which she readily agreed to do. She said to me, "Doctor, I did not come down here to die, but came to get well." She then told me of all the opposition she had met with, and said, "You see, doctor, I am a purty good doctor myself and them folks up yonder is afeard I'll die. I don't do nuthing but midwifery. I have 'borned' 817 children in my time and never lost a mother nor child, and they think they can't do without me. Now, if ye can cure me without cuttin' me open, I want ye ter do hit. I ain't skeered, but I don't much want ter be cut open."

I asked her if she was not willing to leave it all to me, assuring her I would do the best I could for her, and that there was little danger. She replied, "Jist do as yer please. Boyd Baker tole me yer would treat me rite and I ain't skeered."

She went to the hospital that afternoon and I operated upon her before the class the next day. I will not describe the operation, as there was nothing of interest in that. Suffice to say that she made an uninterrupted recovery and left the hospital on the fourteenth day; on the twenty-first day she returned to the mountains, riding her mule home on the return trip, a distance of twenty-five miles. I never had a better or more appreciative patient in my life, and she went away delighted with her treatment at the hospital. Taking everything into consideration, I think the case one worthy of note.

Married at fourteen, the mother of fourteen boys, a completely prolapsed uterus for eighteen years, her ride of twenty-five miles

to the railroad, the strength of character necessary to overcome the opposition of family and friends and her unbounded faith in surgery makes her, in my opinion, a heroine and entitled to a place in the history of modern surgery.

L. SHEDDAN.

Knoxville, Tenn.

ANNOUNCEMENT.

To the Officers and Members of State Boards of Health

To the Officers and Members of State Medical Licensing Boards

*To the Officers of State Medical Associations
To Members of the National Legislative Council*

To University Presidents, College Professors and others interested in Medical Education and Medical Legislation

GREETING:

A Conference on Medical Education, Legislation and Public Health will be held at the Congress Hotel (formerly the Auditorium Annex), Chicago, Monday and Tuesday, February 26 and 27, 1912, the session to begin at 10 o'clock Monday morning.

MONDAY, FEBRUARY 26.

On Monday the Council on Medical Education will hold the Eighth Annual Conference. A special address will be given by Mr. Frederic G. Hallett, Secretary of the Conjoint Board of England, on "The Organization and the System of Examinations of the Conjoint Examining Board of the Royal College of Physicians of London and the Royal College of Surgeons of England." Other important topics bearing on medical education and licensure will be discussed.

TUESDAY, FEBRUARY 27.

On Tuesday there will be conferences on Medical Legislation and Public Health. If necessary the session will be continued on Wednesday.

PUBLIC MEETING.

On Tuesday evening a public meeting will be held at Orchestra Hall, at which addresses on Public Health will be delivered by Senator Robert L. Owen, of Oklahoma,

and Senator Robert M. LaFollette, of Wisconsin.

You are most cordially invited to attend this conference and to participate in the discussions. A complete program of the conference will be sent you later.

COUNCIL ON MEDICAL EDUCATION,

N. P. Colwell, Secretary.

COUNCIL ON HEALTH AND PUBLIC INSTRUCTION,

Frederick R. Green, Secretary.

BOOKS RECEIVED.

THE PRACTICAL MEDICINE SERIES, comprising ten volumes on The Year's Progress in Medicine and Surgery, under the general editorial charge of Gustavus P. Head, M.D., Professor of Laryngology and Rhinology, Chicago Post-Graduate Medical School, and Charles L. Mix, A.M., M.D., Professor of Physical Diagnosis in the Northwestern University Medical School. Volume IX.: SKIN AND VENERAL DISEASES, MISCELLANEOUS TOPICS, edited by W. L. Baum, M.D., and Harold N. Moyer, M.D., Series 1911. Price, \$1.25. The Year Book Publishers, 180 N. Dearborn St., Chicago.

THE PRACTICAL MEDICINE SERIES, comprising ten volumes on The Year's Progress in Medicine and Surgery, under the general editorial charge of Gustavus P. Head, M.D., Professor of Laryngology and Rhinology, Chicago Post-Graduate Medical School, and Charles L. Mix, A.M., M.D., Professor of Physical Diagnosis in the Northwestern University Medical School. Volume X.: NERVOUS AND MENTAL DISEASES, edited by Hugh T. Patrick, M.D., Professor of Neurology in the Chicago Polyclinic, Clinical Professor of Nervous Diseases in the Northwestern University Medical School, Ex-President Chicago Neurological Society; and Peter Bassoe, M.D., Assistant Professor of Nervous and Mental Diseases, Rush Medical College. Series 1911. Price, \$1.25. The Year Book Publishers, 180 N. Dearborn St., Chicago.

PRACTICAL ELECTRO-THERAPEUTICS AND X-RAY THERAPY, with chapters on Phototherapy, X-Ray in Eye Surgery, X-Ray in Dentistry, and Medico-Legal Aspect of the X-Ray, by J. M. Martin, M.D., Professor of Electro-Therapeutics and X-Ray Methods in the Medical Department of Baylor University, in the Medical Department of Southwestern University, and in the State Dental College, Dallas, Tex.; member of the Texas State Medical Association, American Rontgen X-Ray Society, etc. Containing 219 illustrations. C. V. Mosby Company, St. Louis, Mo.

THE JOURNAL

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VOLUME IV

NASHVILLE, TENNESSEE, MARCH, 1912

NUMBER 11

PERITONITIS.

BY RICHARD A. BARR, M.D.,

*Professor of Surgery and Clinical Surgery,
Vanderbilt University, Nashville, Tenn.*

The peritoneum is the largest serous membrane in the human body, having an area only slightly less than the skin (17,182 against 17,502 square inches—Wegner). It has wonderful powers of absorption (1 to 8 per cent of body weight of blood serum being absorbed in one hour by peritoneum of dogs and rabbits—Wegner). Bacteria are found in the anterior mediastinal lymph nodes in six minutes and in liver and spleen in ten minutes after injection into the peritoneal cavity. The peritoneum on the under surface of the diaphragm is the most important absorbing area, and next to this the gastro-colic omentum. The diaphragmatic peritoneum has either actual or potential stomata which allow the passage of solid inert particles in addition to such material as is in solution or is taken up by leucocytes and macrophages. The pelvic peritoneum probably has less power of absorption than any portion of that lining the abdomen proper.

The peritoneum has upon its face surface a layer of endothelial cells which are placed upon a varied amount of connective tissue. In this connective tissue the blood vessels and lymphatics ramify. In the diaphragmatic area the connective tissue is merely a delicate basement membrane. This basement membrane serves as such for the en-

dothelial cells of both peritoneum and lymphatics which later in this region have dilated spaces in the channels. Here are situated the connecting stomata on pseudo stomata. Absorption is assisted by a force within the peritoneum, "peritoneal currents," that has a tendency to carry fluids and even solid particles toward the diaphragm, and this force acts against gravity, but is, of course, modified by position. The pump-like action of the diaphragm and peristaltic activity also aid absorption. Both blood vessels and lymphatics absorb substances in solution, but solid matter (animal cells and bacteria) is taken up by the lymphatics, some directly through the stomata, but in great part through the assistance of body cells (leucocytes and macrophages).

Primary disease of the peritoneum is rare. It is singularly free from new growths and infections, except such as occur as complications of processes involving the various abdominal viscera, and, exceptionally, constitutional diseases or foci of infection outside the abdomen.

The term *peritonitis* covers, with minor exceptions, the nomenclature of peritoneal diseases, and peritonitis is essentially a complication and not an independent process. The peritoneum has the distinction of being more capable of resisting infection than any other structure of the body, and being at the same time the most dangerous location for ordinary infections once its resistance has been overcome and a spread-

ing process inaugurated. The external surface of the peritoneal sac is particularly resistant to non-tubercular infection. Large quantities of pus may remain in contact with it for long periods without any serious involvement of the membrane resulting. It is the free, unattached, epithelial-lined surface that reacts promptly and often violently to infection, and where there are no natural barriers to the spread of infection, once a foothold has been established the inherent resisting qualities of the outer surface of the peritoneum and certain active defensive measures that the inner surface is capable of are essential to keep us all from dying of peritonitis, for some of the hollow viscera of the abdomen are swarming at all times with pyogenic bacteria. The defensive qualities of the inner surface are such that with present-day technic no risk is attached to such infection as may be carried into the cavity by the surgeon. The danger comes from infection that lies within.

There is an essential similarity, pathological and clinical, between all types of peritonitis except that caused by the tubercle bacillus, and for purposes of study we must take the division:

- (1) Tubercular Peritonitis.
- (2) Non-Tubercular Peritonitis.

Non-tubercular peritonitis is an acute process with few exceptions, but the occasional occurrence of a chronic inflammation in which tubercular infections cannot be demonstrated necessitates a classification into

Acute
Chronic

Of these we will consider first *Acute Non-Tubercular* peritonitis.

This is an infective process, though, as the result of chemical and mechanical irritation, it is possible to get a reaction from the peritoneum similar in every way to mild infective processes. Dudgeon and Sargeant claim that even the presence of bacteria can be proved, and that the white staphylococcus is always on hand. They have proven its presence repeatedly in hemorrhage (ectopic gestation, etc.), and if there

is any such thing as an aseptic irritant, the blood might be so considered. For the present, then, we will look upon this type of peritonitis as infective.

In the vast majority of cases the source of infection is within the abdomen, and the peritoneum is involved by (1) extension or by (2) perforation, the result of (a) disease or (b) traumatism. Exceptionally, the focus is without the abdomen, and the peritonitis is of hematogenous origin. In some cases the primary focus cannot be demonstrated, and we have what is probably misnamed *Idiopathic* peritonitis.

Etiologically—classified—

By Extension of Disease.

Perforation

Hematogenous

Traumatism

Peritonitis may occur *by extension* along continuous free surfaces as from the lining of the fallopian tube out the abdominal ostium, or it may result from involvement of intervening tissue, as in extension through the wall of fallopian tube, appendix or gall bladder from the mucous membrane. Again, extension may occur by involvement of the lymph channels and nodes and the surrounding cellular tissue first, and the peritoneum by secondary extension, so to speak, though this is exceptional.

Perforative peritonitis is usually due to disease. Appendiceal perforations are most common, and with gastric and duodenal cover 90 per cent of all cases (Murphy). Typhoid perforations come next in frequency. Rare forms are due to tubercular, dysenteric and malignant ulcers. Perforation or gangrene of the gall bladder in cholecystitis, hemorrhagic and gangrenous pancreatitis, ruptured pus tubes, ruptured ovarian abscesses and cysts, ruptured hydro and pyo-nephrosis, gangrene of the gut due to strangulation or mesenteric infarct, ruptured peri-appendiceal abscesses, etc., are usually classed under this head, though not accurately so.

Traumatic perforation of any of the hollow viscera may occur from gunshot and stab wounds, and from subparietal rupture

the result of kicks, run-over accidents, etc. Very rarely foreign bodies that have been swallowed perforate the gut, but they seldom, indeed, cause more than local abscess formation. Perforation is occasionally accidentally made by a surgeon at operation as in aspiration, etc.

Hematogenous peritonitis complicates septic processes at distant points, also rheumatism, Bright's disease, pneumonia and infectious diseases.

BACTERIOLOGY OF ACUTE NON-TUBERCULAR PERITONITIS.

There are various forms of bacteria found in pure or mixed culture in peritonitis. The following list includes all that are more commonly present:

Staphylococcus Albus.
Staphylococcus Aureus.
Streptococcus.
Bacillus Coli Communis.
Pneumococcus.
Bacillus Pyocyaneus.
Gonococcus.
Bacillus Typhosus.
Proteus Vulgaris.
Bacillus Aerogenes Capsulatus.

Streptococcus Albus—This organism is very mildly pathogenic, if, indeed, at all so. It has been proven experimentally to be protective by causing a rush of fluid and actively phagocytic leucocytes to the site of infection. This is sufficient to protect against an injection of colon bacilli made three hours after. It is also probably responsible for the plastic exudate that protects against the spread of infection by formation of adhesions. Murphy also suggests that it protects by superitoneal infiltration and cofferdamming of lymphatics. It is always present at some stage of every peritonitis (Dudgeon and Sargeant).

Staphylococcus Aureus—This bacterium is comparatively rare in peritonitis, and, when present, varies greatly in virulence.

Streptococcus Pyogenes—This type of infection Dudgeon and Sargeant consider necessarily fatal, and most pathologists and surgeons agree that it is very deadly. It diffuses rapidly, destroys leucocytes and

promptly overcomes body resistance. It is just as deadly in cellular tissue as on the peritoneum.

Colon Bacillus—There are various strains of colon bacilli, with great differences in virulence. The ordinary virulence is greatly increased in diarrhoea and in obstruction or strangulation of the gut. Even purgation with liquefaction of feces increases their virulence in the colon. Under ordinary conditions the colon bacillus is least virulent in the jejunum, next in colon, and most virulent in the ileum (Klincki, quoted by Murphy). The region of the ileo-caecal valve is that of greatest activity (Corner, quoted by Murphy). This bacterium is the most common of those that are of pathogenic interest in peritonitis, and, when present in pure culture, is almost as deadly as the streptococcus. When associated with the staphylococcus albus, and especially when the latter has had opportunity to do prophylactic work, its virulence is greatly modified.

Pneumococcus—This bacterium may involve the peritoneum through the blood current in cases of pneumonia, but the most common mode of entrance is through the genitals in children. It has a decided tendency to localization with abscess formation, though at the onset there may be generalization of the infection.

Bacillus Pyocyaneus—Pus drainage from intra-abdominal infections sometimes becomes blue after exposure to air, showing the presence of this bacterium. In our experience this has only happened in localized processes, and from this we might infer mild pathogenicity, but it is classed as very deadly by Dudgeon and Sargeant. It is said to never be present in association with the colon bacillus.

Gonococcus—Cases of generalized peritoneal infection due to the gonococcus have been reported (Cushing), but this form of infection has a decided tendency to spontaneous localization, due to the plastic exudate that results from or at least accompany it.

Bacillus Typhosus—In typhoid perforations the infection is a mixed one, and the

typhoid bacillus cuts little or no figure. Extension to and infection of the peritoneum does occur in typhoid fever without perforation, and these cases have been ascribed to the typhoid bacillus alone.

The *Bacillus Aerogenes Capsulatus*, the *Proteus Vulgaris* and various other paratubercular and saprophytic bacteria are occasionally found in mixed infections.

Pathology of Acute Non-Tubercular Peritonitis—Based upon the pathological changes, and particularly upon the type of exudate, we can make the following classification:

Diffuse Septic

Serous

Simple

Hemorrhagic

Putrid

Plastic or Fibrinous

Suppurative

Diffuse Septic Peritonitis—This term is used somewhat arbitrarily to describe a type of infection in which death occurs so promptly from the initial dose of bacteria or their toxins that few changes occur in the peritoneum. There is congestion, some proliferation of endothelium and beginning edema of the sub-endothelial connective tissue. The exudate present is small in amount, thin, watery and dark in color. Diffuse septic peritonitis is usually due to the streptococcus, or rarely to the colon bacillus.

Serous Peritonitis is peritonitis with serous exudate into the cavity. There is present hyperaemia, roughening of the endothelium and diapedesis of leucocytes. The intestine becomes somewhat paralytic and is distended, with a more or less poisonous fluid and with gas. The vascular congestion, lymphatic infiltration, endothelial roughening and intestinal paralysis and distension are common to this and the succeeding types, varying with the virulence of infection. Serous peritonitis may result from very mild (simple) or very virulent infection (hemorrhagic or putrid).

Plastic Peritonitis—The plastic exudate is an evidence of mild infection, since viru-

lent infection produces such circulatory stasis that exudate of plasma cells is impossible. While plastic exudate may afford great protection through adhesions, these same adhesions may later lead to great discomfort and danger.

Suppurative Peritonitis—The presence of pus indicates the intermediate type of virulence of infection—neither the most favorable nor the worst. More often the process is circumscribed. Mixed types of exudate are the rule—sero-fibrinous, sero-purulent, sero-fibrino purulent, etc., but the above classification gives the key to this feature of peritoneal pathology.

The extent of peritoneum involved in the inflammatory process varies greatly. The terms "diffuse" and "general" are used to denote the more extensive infections, while those that are limited are called "local." It seems to me a somewhat more elastic classification, according to the extent of involvement, could be gotten by using the terms:

Localized

Generalized

These two terms shade readily into each other and cover the border line cases, though observers will differ as to which class the individual case may belong in.

Peritonitis is not infrequently preceded by *peritonism* (Gubler, 1877) or *abdominal shock*, which results from traumatism to the peritoneum or abdominal viscera. The symptoms of this condition are not inflammatory; they come on before there has been time for the establishment of inflammation. The sudden escape of blood, urine, bowel contents, etc., the strangulation of a coil of intestine, a blow over the solar plexus or diaphragm, and many other forms of traumatism may cause peritonism. Peritonitis frequently develops without peritonism preceding it, and peritonism is not necessarily followed by peritonitis. Even perforation may occur without peritonism, and this is especially true of appendiceal perforation due to small size of perforation and already inflamed state of neighboring peritoneum. Occasionally an actual sense of relief (relief of tension) follows the intra-abdominal rupture of an abscess. When

the irritating material is small in amount, when it is gradually poured out on the peritoneum, or when the local (appendicitis) or general (typhoid fever) sensorium is too benumbed to recognize traumatism, the shock may be so slight as not to be noticed. On the other hand, traumatism may be done to the peritoneum or viscera, causing shock (a blow in the epigastrium, for instance) without perforation or other damage resulting in infection.

SYMPTOMS AND SIGNS OF PERITONISM.

Pain.

Nausea.

Vomiting.

Tenderness.

Rigidity.

Pulse, rapid and weak.

Temperature, sub-normal or at least failing.

Chill exceptionally.

Facies anxious.

Skin, cold and clammy.

Decubitus, dorsal.

Pain at the outset may be general over abdomen, may be referred to epigastrium or around umbilicus, or even outside of abdomen (glans penis), irrespective of location of traumatism. On the other hand, the pain is frequently first at the localization of the traumatism and with a tendency to later generalization. This pain is of extreme severity in many instances, and is usually paroxysmal.

Nausea and Vomiting unusually prompt, and particularly so if there is food in the stomach. They subside after the discharge of stomach contents, and may not recur without the development of peritonitis or obstruction.

Tenderness and Rigidity go together and are ordinarily coincident in extent with the peritoneal irritation. With irritation of the parietal peritoneum, the rigidity is more marked. Percussion may possibly show the presence of free fluid or free gas. Free fluid is difficult to demonstrate, as it is small in amount. The obliteration of liver dullness with undistended abdomen is very significant of free gas. Exceptionally, rigidity is

slightly marked or possibly even absent as in intestinal strangulation where there is no involvement of parietal peritoneum.

The *Pulse* of peritonism is rapid and weak, rarely slow and weak. It hasn't the hard, wiry character of beginning peritonitis.

The *Temperature* probably always falls at first, but the initial fall is often overlooked in peritonism, occurring in the course of febrile conditions, like typhoid fever, chills or chilly sensations occur at times. They are not positive evidence of septic irritation.

The *Facies* is pale, drawn and anxious, and the brow covered with drops of perspiration.

The *Skin* of the body generally is cold and moist, and the patient usually lies in the dorsal position, with knees drawn up and shoulders elevated to relax the abdominal muscles.

Death may occur from the primary shock or from intra-abdominal hemorrhage, or from rapidly developed bacterial toxins. Without reacting to any extent from the shock, the patient may develop diffuse septic peritonitis and die in from twelve to forty-eight hours. Reaction may occur with or without the development of peritonitis, which, when it does follow, runs a course determined by the factors to be mentioned unless modified by treatment.

SYMPTOMS AND SIGNS OF ACUTE NON-TUBERCULAR PERITONITIS.

Peritoneal reaction and the resulting symptoms are modified by:

- (1) Suddenness of infection.
- (2) Amount of infectious and irritating material.
- (3) Character of infectious material.
- (4) Location of infection.
- (5) Area of infection (degree of generalization).
- (6) Condition of peritoneum.
- (7) General condition of patient.
- (8) Personal equation of patient.

(1) The sudden pouring out upon the peritoneum of a certain amount of infectious material will get a more violent reaction than if it had escaped gradually. In

the latter instance the defensive powers of the peritoneum meet the enemy in detail, so to speak, and have an easier task in fighting them.

(2) That the amount of infectious and irritating material will influence peritoneal reaction and resulting symptoms is too readily understood to require discussion.

(3) The character of the infection is probably the most important factor in influencing peritoneal reaction. The varying virulence of bacteria has already been discussed. Even blood is irritating to the peritoneum, and solid particles (food, fecal matter, etc.) are intensely so, in addition to the protection they offer to bacteria against absorption.

(4) There is a vast difference between the reaction gotten by infection of the diaphragmatic peritoneum and that of the pelvis, due mainly to difference in powers of absorption. In the small intestine area we get rapid diffusion by peristaltic movement, and also rapid absorption, though less rapid than at the diaphragm.

(5) The degree of generalization will influence both the local and constitutional evidences of infection. Other things being equal, the symptoms necessarily vary directly with the area of peritoneum involved.

(6) The drying of the peritoneum during operation and the injury done to its endothelium by handling certainly predisposes to infection. Whether there is increased or diminished absorption does not appear to be perfectly clear, but the phagocytic action of the endothelium is certainly crippled.

(7) Lowered tone of general health and general resistance certainly results in lowered local resistance; with vital forces below par, infection spreads rapidly.

(8) With exactly similar local and general conditions, no two patients will react in the same way to infection. The personal equation will modify the picture in this as in all diseased conditions.

With these various modifying factors the clinical features of peritonitis vary greatly. When conditions have been favorable for

generalization, and the process has had time to unmask itself thoroughly, we could hardly ask for anything more characteristic. But to distinguish beginning generalization, or even to distinguish established generalization early, is a more difficult task and requires close study of symptoms and signs.

Individual symptoms and signs in peritonitis vary not only in degree, but as to actual occurrence, and we can probably get best results by studying the following features in detail:

- Pain.
- Tenderness.
- Rigidity.
- Posture.
- Pulse.
- Temperature.
- Respiration.
- Tongue and Stomach.
- Bowels.
- Urine.
- Blood.
- Nervous System.

Pain in peritonitis is very variable and so of uncertain value. It is at times entirely absent, and this is more often the case when the parietal peritoneum is not involved. It is usually present, however, and may be intense and continued. The location corresponds to some extent to that of the inflamed membrane, but it may be referred to a special area which is not necessarily most seriously involved, or even involved at all. As in many other abdominal conditions, some part along the median line is the favorite area of reference.

Tenderness on pressure or movement is practically constant, with just enough exceptions to prove the rule. It corresponds to the extent of irritation, which may be greatly in excess of that of serious infection. Diffused exudate and diffused irritation do not always mean diffusion of serious infection, and so general tenderness over the abdomen does not necessarily imply that there is generalized peritonitis other than of the staphylococcus albus type. The hyperesthesia of nervousness some-

times adds difficulty to giving proper valuation to this symptom.

Rigidity is usually, but not always, associated with tenderness and corresponds more or less accurately in area. There are two types of rigidity in peritonitis—voluntary and involuntary. The former is due to an effort on the part of the patient for protection against traumatism, and is more or less marked in proportion to tenderness and nervousness. Involuntary rigidity is due to irritation or infection of the parietal peritoneum and consequent tonic spasm of the abdominal muscle. It is not capable of being relaxed by voluntary effort on the part of the patient or by distraction of the patient's attention. It is often of board-like hardness, and when present is of serious import. After from 24 to 72 hours, muscular tension relaxes, being overcome by the pressure of gas in the bowel. Muscular rigidity is absent in post-operative peritonitis.

Posture—Peritonitis and movement are incompatibles. The patient will keep very quiet in the position of least discomfort, which is usually dorsal, with the legs drawn up and shoulders elevated. Occasionally the right or left lateral position is occupied, with knees and chin approximated.

Pulse—The pulse is one of the best guides to the condition of a patient with peritonitis, though occasionally it is normal in rate and quality in spite of extensive infection. Early in peritonitis, the pulse is hard, wiry and regular, the rate of beat varying from 80 to 120 per minute. In later stages it begins to lose its tension and to increase in rapidity, getting faster and weaker, until finally it is a mere faint flicker that can't be counted. Very frequently in progressive infections the pulse becomes irregular before there is marked change in quality. This is a bad omen, and a pulse in peritonitis that begins to drop an occasional beat may well excite anxiety.

Temperature in peritonitis is variable and misleading and is a poor index to pathology of patient's vitality. Profoundly septic conditions may be marked by a sub-normal temperature or by hyper-pyrexia. A steadily rising temperature is more frequent in

the promptly fatal cases in my experience. A temperature standing and varying anywhere from normal to 103 degrees F. is not incompatible with any grade of peritonitis except the diffuse septic type. Chills are rather uncommon and when present are usually initial. Repeated chills may occur with peritonitis of puerperal origin. Even chilly sensations are exceptional, though less so than distinct chills, and the sweating that might be expected with so much sepsis is absent.

Respiration—The changes in respiratory movement depend to a good extent on other symptoms. When we have pain, tenderness and rigidity we get a rapid, shallow costal type of respiration, and the same is true after the abdomen becomes distended. I have never noticed an early acceleration of respiration or difficulty in taking a deep breath unless other symptoms of more accurate diagnostic value were present. With failing circulation and increasing respiratory embarrassment, cyanoses develops and may be marked. Air hunger is often noticeable in late stages.

Tongue and Stomach—The tongue is white and coated at first (in absence of previous disease), but soon becomes dry and fissured from loss of fluid by vomiting. For the same reason thirst is usually intense. Nausea is the rule and vomiting is fairly constant. First there is vomiting of stomach contents, then bile-stained fluid at longer or shorter intervals. Later there is what might be called a cessation of vomiting, for the stomach no longer rejects its contents. There is simply a regurgitation or overflow at short intervals of a small part of the dark brown feculent material which accumulates in the stomach, and of which it is never emptied except by lavage. In diffuse septic peritonitis vomiting is usually absent, and I have seen less virulent infections go to the regurgitant stage before anything was discharged from the stomach.

Bowels—Constipation is the rule, and may be absolute, though a septic diarrhoea is possible, especially in puerperal infections. Bowel stasis is due to paralysis of the muscular coat of the gut, probably

through the action of the infection on its nerves. The bowel involved in any inflammatory process, however limited, loses some of its muscular force and has an unusual formation of gas within its lumen in a comparatively short period of time. Only the most rapid cases of diffuse septic peritonitis escape an increase of gas tension within the bowel. So soon as muscular rigidity gives way to the pressure of gas we have tympanitic distension of the abdomen, or tympanitis. The source of this gas is not known, but it has been proven by Kader's experiments not to be entirely or even in great part due to decomposition of bowel contents. Free fluid can at times be detected in the cavity.

Urine—The urine is scanty and high colored, due to loss of fluid by vomiting, and the amount of indican is increased. There is a tendency to complete suppression in the more severe infections.

Blood—The total leucocytosis is an index to the body resistance, and the polynuclear percentage is an index to the virulence of infection (Sondern, Albrecht). This rule has many exceptions, mainly on the negative side, but the leucocyte count is a valuable aid in diagnosis and in prognosis.

Nervous System—The mind is usually clear and the patient wakeful and with intense mental restlessness. Profound depression, stupor and coma may be present late in the disease, though occasionally the faculties are retained to the end. Anxious, drawn expression, with pinched nose and shrunken cheeks (*Facies Abdominalis*), comes as a late symptom.

The symptoms of peritonitis are the local evidences of inflammation and the constitutional evidences of sepsis. In diffuse septic peritonitis the latter alone are present, and the gastro-intestinal as well as other abdominal symptoms may be entirely absent.

Let us keep in mind the extreme variability of the symptoms and signs, and remember that more than one may be slightly marked or absent in any case, while we recapitulate what we may expect to find in typical cases.

Pain, nausea and vomiting, constipation,

high-colored, scanty urine, increased pulse rate, rise of temperature; rapid, shallow respiration, mental anxiety and restlessness and great thirst are the symptoms.

The physical signs are dorsal position, physical quiet, anxious expression, abdominal tenderness and rigidity on palpation in the early stages, early tympany on percussion over rigid muscles, with general tenderness and tympanitic distension later, except in the flanks, where the dullness of fluid may possibly be shown on piano percussion (Murphy). Examination of the blood shows leucocytosis.

(TO BE CONTINUED IN NEXT ISSUE.)

SURGICAL ASPECT OF SO-CALLED INDIGESTION.*

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No term in the whole range of medical nomenclature has been made use of more frequently, for the purpose of concealing our monumental ignorance, than that of indigestion; and no condition has been less understood and treated in a more unscientific manner.

It is a very easy matter, when a patient comes to us for examination, who is suffering from some uncomfortable sensation in the abdomen, especially the upper abdomen, to feel the pulse look at the tongue, then look wise and say indigestion. This diagnosis satisfies the patient for the reason that it confirms his own diagnosis, and it satisfies us for the reason that we do not know what else to call it, and are too careless, or lazy, to make an investigation of sufficient thoroughness to arrive at a rational and scientific opinion.

By indigestion is meant the inability to digest food, and it never means anything else. It is always a symptom and never a distinct pathological entity.

While our opinions, upon a great many medical subjects have undergone great changes in the last few years, upon none

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has the change been more radical than that upon the subject of indigestion.

In some of our older text-books it was treated at great length as a distinct entity and great stress was placed upon the different varieties and the treatment for the same.

From time immemorial it has been the custom of physicians to call all digestive disturbances, and conditions which cause pain or discomfort in the upper abdominal zones, indigestion, and the treatment has been directed along two lines—either to increase the digestive powers of the stomach or to increase the digestibility of the food. To accomplish this some effort at dieting is attempted, and a prescription given for hydrochloric acid and pepsin, both of which are, as a rule, contraindicated and absolutely worthless to the patient.

The process of digestion is rather well defined. It begins in the mouth, is continued in the stomach and is completed in the small intestines.

When we make our diagnosis, as a rule, we do not investigate as to which of these processes is at fault, or whether there be any undigested food in the feces; we just call it indigestion and proceed with our routine empirical treatment.

I cannot, in the time allotted me, begin to discuss all of the pathological processes which may give rise to discomfort in the abdomen which are often called indigestion, as there are numerous conditions, any one of which would necessitate a paper as long as this to discuss its different phases.

My object in writing upon this subject was to emphasize the very great importance of making more thorough investigation of the cases of so-called "stomach trouble," and to call attention to some of the conditions which give rise to them, that are strictly surgical in character, and for which medical treatment is absolutely worthless and utterly unscientific.

So-called indigestion may arise from pathological lesions of the stomach itself, or it may arise from diseased conditions adjacent to, or remote from, that organ. These conditions are, some surgical and

some medical, but to my mind by far the greatest number of the chronic cases are surgical in their nature.

Briefly stated, some of the conditions which produce true indigestion, and are best treated along medical lines are such things as faulty mastication, over-eating and drinking, taking food and drink too hot or too cold, excessive use of alcohol and other drugs, lack of exercise, mental worry, grief, anger, neurasthenia, wasting as diabetes, tuberculosis, nephritis, cardiac lesions, cirrhosis of the liver, etc.

The above mentioned conditions do not come under the head of surgical cases, and are best treated along general lines, some of them yielding very satisfactorily to this line of treatment, while of course others can only be palliated by any course of treatment which may be adopted.

Lesions of the stomach itself which cause this complex symptom are gastric ulcer and cancer, pyloric obstruction, gastric dilatation and prolapse, motor insufficiency, and disturbed secretion, as achylia gastrica and hyperchlohydria.

Diseased conditions adjacent to the stomach which produce so-called indigestion are duodenal ulcer, disease of the liver and pancreas cholelithiasis, infections of the bile passages and peri-gastric adhesions.

Lesions remote from the stomach which produce this complex symptom are disease of the brain and spinal cord, Potts disease, hemorrhoids, disease of the appendix and female pelvic organs, lacerations of the pelvic floor, prolapsed and movable kidney, and intestinal adhesions. Cases coming under the last two headings are almost, if not entirely surgical, and medical treatment is absolutely worthless insofar as effecting a cure is concerned.

Digestive disturbance is one of the first symptoms of gastric carcinoma, and is usually treated as indigestion until late in the disease. That gastric cancer is one of the frequent causes of this symptom, and that it is also a surgical condition, there is no question. A gastric analysis should be made in every case of chronic indigestion for the purpose of ascertaining, if possible, whether

of not carcinoma be present. This procedure should not be too long delayed, for if anything is to be accomplished by any line of treatment the diagnosis must be made early.

Even if positive diagnosis of cancer cannot be made, if it cannot be positively excluded, an exploratory operation should be advised.

If at operation a cancerous growth should be found located at the pylorus or lesser curvature, a pylorotomy, or partial gastrectomy, should be done, as this is the only thing that will give the patient a chance to recover.

If the operation is done early before metastases have occurred the prognosis is reasonably good. Even in advanced cases very great relief may be obtained and the patient's life prolonged by doing a gastro-enterostomy.

While there is some difference of opinion as to which class gastric ulcer belongs, there can be no doubt but that a great many cases are best treated surgically. If the ulcer does not yield to systematic treatment in a reasonable length of time, or if persistent, or severe hemorrhages are occurring, or if the ulcer be of the chronic, indurated variety, surgical intervention is certainly demanded.

Just what percentage of gastric cancers have their origin in ulcers has never been fully determined, but that a great many cases of gastric ulcer get well after a certain length of time, and later develop malignancy there can be no doubt, and the longer the ulcer is permitted to remain active the greater the danger of its taking on malignancy.

Pyloric obstruction is responsible for a great many cases of chronic indigestion. There is no question as to which class this condition belongs. Medical treatment is absolutely powerless to relieve, while the results following correct surgical procedures are all that could be desired.

Stricture of the pylorus may be either organic or spasmodic.

The organic may be either malignant or cicatricial due to healed ulcer or perigastric

adhesions following severe infection of the biliary apparatus. If the obstruction be due to cancer the pylorus should be removed and gastro-enterostomy done. If due to cicatricial contraction from healed ulcers or spasmodic, due to an ulcer within the grasp of the pyloric sphincter, or from perigastric adhesions which cannot be liberated, pyloroplasty or gastro-enterostomy should be practiced.

When there is pyloric obstruction from any cause the motor function of the stomach is interfered with; food remains in the stomach, fermentation and decomposition takes place, followed by all of the symptoms which go to make up the complex symptoms of indigestion.

Gastric dilatation is another cause of chronic indigestion, and is frequently the result of pyloric obstruction.

In this condition the muscular walls of the stomach are weakened, the motor function interfered with, the greater curvature lowered so that the organ cannot empty itself, food is retained, fermentation and decomposition takes place, producing great gastric distress and all the symptoms of so-called indigestion.

The object of treatment in this class of cases is to secure drainage, and this can only be accomplished by some surgical procedure. Temporary relief may be obtained by gastric lavage and dieting, but no permanent benefit can reasonably be expected.

Gastropnoia is, as a rule, only a part of a general viceropnoia, and is not very favorably influenced by any line of treatment. This condition is due to a weakened, relaxed condition of the abdominal walls, and is best treated by some mechanical appliance, such as the adhesive plaster support devised by Dr. Achilles Rose.

If the prolapse be simple or due to pelvic omental adhesions, surgical treatment is certainly indicated.

Pathological lesions of the bile passages are usually treated as indigestion until the characteristic attacks of colic or some other characteristic symptom of gall-stones are manifested.

Some authorities claim that many indi-

viduals go through life with stones in the gall-bladder, and never suffer any inconvenience from them, but Moynihan says, "In a vast majority of these cases there have been symptoms, but they have not been recognized as arising from the gall bladder, but have been sufferers from indigestion."

I have recently had a case to come under my observation that will illustrate very clearly Moynihan's contention.

Mrs. C., age 54, had been a sufferer from indigestion for twenty years. At first she had some attacks of colic, then an attack of some kind which her physician at that time said was an abscess in the epigastric region. Since that attack which was fifteen years ago she has not had an attack of colic, but has been a constant sufferer from so-called indigestion. She had been subjected to all kinds of medical treatment, had tried all kinds of dieting and still her indigestion remained and she became practically an invalid.

She fell into the hands of Dr. H. C. Chance of Cumberland Gap, Tenn., who referred her to me for operation. Upon opening the abdomen the gall-bladder was found absolutely packed with very large stones. There were no adhesions and no evidence of any previous inflammation except a small amount of pus mixed with the stones. Here was a patient who had gone for fifteen years with a gall-bladder filled with stones without having an attack of colic jaundice, or any other marked symptom of gall-stones except her chronic indigestion which had produced a condition of practical invalidism for all that time.

It is important that these cases be recognized as early as possible for the reason that an operation for simple gall-stones is a very easy and safe operation, while, if allowed to go on until grave structural changes have taken place, the operation becomes one of serious moment.

Chronic inflammation of the appendix is the cause of a great many cases of so-called indigestion. These cases may or may not give a history of acute attacks of appendicitis; usually they do not.

Quoting from an article in the British

Medical Journal for January 29, 1910, Moynihan says: For years I have been brought by degrees to recognize that many of the intractable cases of indigestion, in which a lesion of the gall-bladder, stomach, or duodenum might have been supposed to exist, no structural change could there be found.

"On further investigation an appendix, obviously diseased, was discovered, and its removal was quickly followed by a complete cessation of all digestive symptoms. He further says: "No operation for supposed gastric or duodenal ulcer is complete until an examination of the appendix has been made. If in such operation no lesion can be found of the stomach or duodenum it is never permissible to do any operation, such as gastro-enterostomy. While this operation gives results not surpassed by any other when done in strictly appropriate cases, it is worse than useless in chronic appendicitis."

Moynihan believes that the mimicry of the symptoms of gastric ulcer in these cases is due to an exaggerated action of the pyloric sphincter, and says that investigation is necessary to ascertain the frequency with which mucous erosions, the acute medical ulcer, is dependent upon lesions of the appendix.

That chronic appendicitis is one of the frequent causes of so-called indigestion there can be no doubt. This fact has been thoroughly proven by numerous investigators along this line—the Mayos, Murphy, Deaver and other surgeons who have large numbers of abdominal operative cases. Even in my limited experience I have seen some of these cases and have observed that the symptoms presented are the symptoms of pyloric stricture. In fact one of the cases which came under my observation was operated upon for pyloric obstruction, a pyloroplasty being done with only temporary relief. Later the woman was operated upon for diseased tubes and ovaries, and the appendix was found to be diseased and was removed with complete relief of all digestive disturbance.

Movable, prolapsed or floating kidney is another cause of so-called indigestion. I do

not mean to say that all women who have a movable kidney suffer from symptoms of indigestion, neither do I believe that all cases presenting digestive symptoms should be operated upon. Like prolapse of the stomach, if it is only a part of a general splanchnoptosis, anchoring the kidney will do very little good, and the operation will prove a disappointment.

The relief following nephropexy, if properly done, and in suitable cases, is very satisfactory indeed.

What has been said of lesions of the kidney and appendix will also apply to diseases of the female pelvic organs.

Chronic tubal and ovarian disease, pelvic inflammatory exudates, subinvolution, retroversion and prolapse, metritis and endometritis, lacerations of the cervix and perineum, may all cause digestive disturbances, first through reflex neuroses from irritation to the sympathetic nervous system, and second from adhesions producing traction and torsion of the intestines interfering with their proper motor function.

Correct surgical procedures to correct these pathological lesions will bring about a cessation of the gastric disturbance.

Time will not permit me to mention more of the conditions which may produce this complex symptom, and which are best treated surgically, so I will close by saying that when a case of so-called indigestion does not yield to medical treatment, if systematically and scientifically carried out, in a reasonable length of time, it is strong presumptive evidence of some surgical condition.

When I make, or have made, an analysis of the gastric contents and find the secretion to be normal, or nearly so, I am then satisfied that the trouble is not in the stomach itself, and proceed to make a careful and systematic examination of the other abdominal and pelvic organs.

That an individual can live without a stomach, and the digestive function be very satisfactorily performed has been very clearly proven. The operation of total gastrectomy has been done a sufficient number of times to prove this to be fact.

The experiment has also been made frequently upon dogs of removing the entire stomach and their digestive function preserved. This fact leads us to conclude that where the motor function of the stomach is not interfered with so that the food is properly passed into the intestinal tract, that chronic gastric indigestion, if it ever exists produces very little discomfort.

I am fully convinced that by far the greater number of cases of chronic indigestion, so-called, are due to surgical conditions. It at least behooves us to do the patient the justice and kindness to make a careful and systematic examination and to not jump at conclusions.

In many of these cases early diagnosis and early operation are just as urgently demanded as for any other well recognized surgical condition.

By making a careful and systematic physical examination, and an analysis of the stomach contents a correct diagnosis can generally be made, and the proper treatment instituted.

DIAGNOSIS OF PNEUMONIA IN INFANCY.*

BY O. W. HILL, M.D.,
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The diagnosis of pneumonia, the most frequently seen of winter diseases in infancy, is probably the cause of more errors than that of any other disease, and this error is largely due to our mode of teaching, both in lectures and in text-books concerning the characteristics of pneumonia in infancy. In an effort to make complete such a description, and attempting to portray the different types and differentiating between the lobar and lobular types, the whole matter is made more difficult for the student, although complete descriptions are necessary in exhaustive treatise on pediatrics.

In the first place, as to the difference between the lobar and the lobular type of pneumonia, occasionally a case will follow

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the adult lobar type, but such cases are rare, and the symptoms are different from those of the lobular type. The treatment is essentially the same, and there is in my opinion no necessity of differentiating in infancy. The important fact, and one which should be emphasized, is that pneumonia in infancy is a disease that should be recognized by signs ascertained independent of percussion and auscultation of the chest, such signs being valuable to confirm the diagnosis and locate the lesion. But the general picture of the disease is usually sufficient for an accurate diagnosis, and if one waits for the physical signs elicited by auscultation and percussion he may have to wait until the patient is convalescent, or never make a diagnosis in a well-marked case.

The clinical pictures of pneumonia in infancy has been clearly set forth by Dr. Freeman and Dr. Northup, and the object of this paper simply is to emphasize the importance of recognizing it by the symptoms and to verify the diagnosis by physical signs.

An infant with pneumonia, whether it be primary of secondary, suddenly becomes sick, sometimes alarmingly so; the little fellow is "dopy," indifferent, or sleepy, when only a few hours before he has been playing bright and active. It is found that the little fellow breathes much more rapidly, has a rising temperature and usually there develops a cough. On taking the respiration and pulse accurately the relationship is apt to approximate one to three, often going on to a ratio of one to two, an ordinary observation being fifty to a hundred and fifty.

These five symptoms, then, the sudden onset, depression, rapid respiration, fever and cough, are sufficient in many cases to create a suspicion of trouble in the lungs. In addition, another set of symptoms may be noticed by observation. As soon as one looks at the infant flaring nostrils are noticed, and usually the pneumonia type of breathing, in which the ordinary type consists of an inspiration followed by an expiration, and then a pause, is replaced by a

type in which the inspiration is followed by a pause, and the expiration of a typical grunt indicating pain. Another sign occasionally elicited, and, to me, a very suggestive one, is rigidity of the neck and upper extremities without rigidity of the lower extremities, this being due to a sore chest, and an effort at protection. These four signs, flaring nostrils, pneumonia breathing, expiratory grunt and rigidity of the neck and upper extremities, are almost pathognomonic of the disease. The signs that we find in the chest simply serve to corroborate the diagnosis. The shower of crepitant rales at the end of inspiration, the most characteristic sign; the occasional but rare area of dullness in percussion with diminished breathing, are indicative of an initial congestion; the presence of a localized bronchitis, all of these are of value in confirmation.

In my opinion, pneumonia in infancy is a disease furnishing characteristic signs on which a diagnosis may be based before the lungs are examined. The symptoms are sudden onset, depression, rapid respiration, with ratio of one to three; fever and usually cough.

If with these are noticed flaring nostrils, pneumonia breathing and expiratory grunt, a definite diagnosis may be made, while rigidity of the neck and upper extremities without rigidity of the lower extremities are important confirmatory signs of its presence. Auscultation and percussion of the chest should always be used in confirmation of the diagnosis, and for localizing the lesion; also for information as to its character.

ANOMALIES OF THE AMNIOTIC FLUID.

BY DR. J. W. COX,
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Freakish demonstrations in the development of the human specie can only be accounted for by interrupted cell growth due to constitutional defects of hereditary or acquired disease or tendency, evils of social life and environments of the progressive

age. The intention of Nature to do the perfect thing in creation and protection of the specie is plainly evident in the adjustment, both anatomically and physiologically. The relations and the distributions of the human organs are plain evidence that if perversion by causes as enumerated had not entered into the normal, there would be no cause for investigation as to why the abnormal or anomalies exist. For the fulfillment of the perfection of the species, the source from which it comes must be pure. When we consider the delicate process of procreation and how well nature in the construction of the generative organs has protected the evolution of pure species, we conclude that anomalies in the process must be and are due to some violation or abuse, acquired or hereditary causes, over which the individual has no control. When we study the organs of procreation we are impressed with the fact that, from the perfect and by the perfect, there can be no anomalies, but inasmuch as this is not always the true condition we find, we are forced to look into a field upon which depends a perfect progeny for the opposite condition, and by scientific research know the causes which are pathological. The fecundation of the ovum and its escape into the uterus is followed by a simple act, but very complex when the peculiar physiological manifestations are understood; when the maternal physiological action begins in the uterus, after the presence of the ovum, we see a peculiar yet natural process actively begin; the nidus of life and its delicate, protecting process has begun and is guarded with physiologic care. The decidua, the alantois, the false and true amnion, how well the protecting shield and nutrient elements encase the foetus in its growth, and organize a delicate, yet essential membranous sack, the same secreting a fluid in whose waters the new life floats, protected from the contraction of powerful muscles and a cushion against external violence, to give ease to the new growth in its movements so no constricting bands may hold in check the healthy development of its members, extremities or its life endangered.

Now if in this wonderful mechanism there is a waver in the process, either by reason of the constitution of the individual or the unkindly and thoughtless environments of social life, or the freakish double or multiple impregnation of ovules, then we may look for anomalies in the amnion. It is not the intention of the essayist to enter fuller into the minute embryology and physiological formation of cell growth. It is enough to say that it is his desire to enter superficially into the pathology and account for the anomalies which occur in the amniotic fluid. Our attention is first called to the analogy between the pathology of the amnion and serous membranes, in that the amniotic membranes are alike in that they are susceptible to change of secretion, inflammatory processes and plastic exudates, with inflammation of these serous coats are alike subjected to adhesions, and in all being so closely identified with the foetus in its development and healthy existence, it is well to look for the causes that produce the anomalies in this fluid. It is also well to remember that the pathology in or due to these manifestations are directly shown to be in the uterus, and the exciting causes may be due to some interference by reason of the constitution, avocation or environments of the individual. The normal quantity of liquor amnii at term is supposed to range from one to two pints. Occasionally there may be a very much less quantity, as you may often have observed, and some time so scanty or deficient as to produce serious consequences to the growth of the foetus and the premature expulsion of the same. There have been cases reported where the premature delivery has been so effected that the projectile parts like the maleoli; knees and elbows are or were ulcerated by reason of the friction of the foetus against the contractile tissues of the uterus. It has also been demonstrated that many deformities of the foetus are due to this cause, and we are led to believe that many monstrosities are due to arrested cell growth by reason of the scanty abnormal secretion or "Oligohydramnios," or due more frequently to over secretion, "hydramnios."

There has been a great diversity of opinion as to the relative cause of the deficiency or excessive secretion of this fluid, some claiming that it is largely due to the foetus, but the greater number trace these conditions as maternal, realizing that the amniotic secretion is much greater in the earlier foetal life, and if continued in its active secretion in the latter half of gestation it would be a very common thing to have in nearly every delivery hydramnionic conditions; it then naturally leads that the absorbing power of the amniotic membranes is as active in the latter part of pregnancy as its secretory activity is in the early half. Any interference in the constitution of the mother affecting secretory or absorbing power of this sack would and does prove the theory that this contrary condition is due to an abnormality in this fluid, either in its quantity or chemical changes of the same, and that the causes, as have been intimated in the introductory, hold good. Fehling adhered to the opinion that the excess of the liquor amnii is altogether a maternal production, saying "The thinner the maternal blood the greater is the quantity of liquor amnii," and advises that it would be well to examine the blood of the patient affected with hydramnion and detect the hydraemia of pregnancy, so that we may be able to improve the condition of the blood of the patient. The causes as promulgated by many different obstetricians are so very numerous that it would be onerous to the essayist and annoying to his hearers. As a practitioner of limited experience in this field he wishes to state that the few cases that have come under his observation have been largely confined to two classes of individuals when traced to causes, tubercular and syphilitic. However, in one subject of recent date alarming symptoms were present, due to hydramnion, which was found to be due to a double conception with the death of one foetus at about the third month, judging from the size and consistency of the placenta, which appeared as a distinct body from the one that furnished the living foetus at the eighth month, vestiges of the membrane and the umbilical

vessels were discernible. The case in question suffered from pressure symptoms to such an extent that it was necessary to puncture the membranes before dilatation of the os-uteri. The assayer, by reference to this peculiar anomaly, finds reference to uni-oval twins, in which is found a dropsical amnion, and while the other presents the opposite, oligo-hydramnion, the probable true history in these freaks is that the balance of vital existence is greater in one than in the other, and hence a natural hypertrophy of the heart and kidneys, with increased activity, produces the anomaly of hydramnios. A greater blood pressure also is a stimulation to the action of the skin, as well as the kidneys, and hence the tendency is to a great amount of the serous fluid being excreted, and the loss of the absorbing power of the membranes increases the volume and tension. In the case here referred to the quantity of amniotic fluid was about three gallons. The family history in this case was that of the strumous character, with one sister being an epileptic and one child, a boy of about twelve, knock-kneed, awkward and sullen in disposition, with an absence of that playful mischievous nature that is associated in a boy's character where there is a marked degree of intelligence; further than above as to family history he knows nothing.

SYMPTOMS AND DIFFERENTIAL DIAGNOSIS.

The symptoms of hydramnion and "oligo-hydramnion" are not very unlike some other cystic or other tumors of the abdomen. The distress from pressure symptoms in hydramnion is generally more marked in the rapidity of the secretion, and in fact it is remarkable to what extent the uterus will be distended at times with the effusion without very uncomfortable symptoms. We find this in those cases that fill slowly the great distress by pressure symptoms in the thorax and abdomen with cough. Pleuritic pains and even pneumonia are found in those acute and rapid hydramnios cases. The distressing symptoms are not all due to pressure upon the organs of the thoracic viscera, but the interference in the circulation in the limbs call at times for

very careful attention. Varices are very common, distressing conditions, as are hemorrhoidal tendencies.

Even when the very alarming symptoms of constant vomiting, anxious expression, cyanosed face and cold extremities and a very rapid and maybe irregular heart's action we may be misled by the history given as one of hydramnios, due to pregnancy, when, in fact, there has been no conception, and the condition being due to general dropsical conditions that have been slowly forming, and general anasarca. These conditions may be associated with pregnancy, and the mistake may and has occurred where a mistaken diagnosis has lead to the tapping of an enlarged bladder or supposed ascites. The essayist had such an experience early in his professional life, being sent by the senior physician who had seen the woman a few days before, at which time he diagnosed as a case of hydramnos, due to pregnancy of the seventh month. When he saw the patient she was suffering from very annoying pressure symptoms, as interference in breathing, sick stomach, cyanosis and a general anasarca, rapid heart, etc. After the administration of calomel and magnesia and cream of tartar the patient began voiding great quantities of urine, and became greatly relieved. He had occasion about six months after to be in the neighborhood, and his former patient was present, and the query to her was, "Where is your baby?" She smiled and said she had no baby, and had lost none; that she continued to get smaller after the medication until she reached her normal size and condition, and was now regular and as well as she ever was in her life. He has realized several times since the difficulty in making a correct diagnosis in this class of cases.

The treatment of these anomalous cases are largely individual, removing the cause or causes, and taking into consideration the acquired or constitutional degeneracy of the patient, the conditions always suggesting the treatment which is largely empirical.

CARDIAC NEUROSES.

BY W. J. MATTHEWS, M.D.,
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An apology is due for the length of this paper. I first intended writing a paper on palpitation only, which would be a large subject if considered fully, but palpitation and its kindred perversions of heart action are so intimately associated and blended with conditions manifested by pain and distress in the cardiac region that it is difficult to consider them separately. I shall, therefore, call attention to some of the more important features of the whole group, making no effort to treat the subject exhaustively. There can be no question about the importance of the subject. Various medico-legal, life insurance, social and business questions arise in connection with this subject for the consideration of the physician.

There is a great deal of misapprehension on the part of both profession and public as to the nature and extent of heart affections. There is a decided tendency to consider every disturbance of the heart as a serious and perhaps incurable organic disease. There is probably no fear more intense and universal than that caused by a knowledge of some disturbance of the heart mechanism. These considerations make it very important that the profession at least have a reasonably clear understanding of the nature and extent of these heart disturbances. The physician of this day who would irrationally consider every heart disturbance as a serious and incurable organic disease is as far wrong as he who would consider every venereal sore as an evidence of syphilitic infection.

I make no claim to a thorough understanding of this subject myself, neither do I claim any distinct originality for the views here presented. I have availed myself freely of the literature on this subject, and am especially indebted to the works of Osler, Anders, Babcock, Nothnagel, Strumpell and others for much of the material in this paper.

It is manifestly impossible to establish

a hard and fast line of distinction between strictly organic and purely functional diseases of the heart. In general terms, by functional diseases, or "neuroses" of the heart, we mean those conditions manifested clinically by a perversion of the heart's action, or by a pain and distress in the region of the heart, or a combination of the two, and in which no structural changes can be discovered by examination. These disorders, though termed functional, are probably the expression of some disorder of the nervous system, hence the term "Cardiac Neuroses."

As we are frequently unable to discover any pathological or structural changes, we are forced to conclude that some "neurosis" is responsible for the symptoms, but as the heart symptoms are predominant, it is natural to regard the symptoms present as due to heart disease. As a rule, these patients present other nervous symptoms, either of a general nature or referable to individual organs.

It is well known that the condition of the nervous system exerts a profound influence on the heart. Mental excitement may even arrest the heart's action and cause death. Grief, worry, anxiety or a perverted condition of the mind may greatly disturb the action of the heart. Unguarded remarks of the physician, newspaper reports of medical cases and popular advertising literature may greatly contribute to the popular dread of heart disease and seriously disturb the heart's action.

The nervous character of heart symptoms is to be determined chiefly by the existence of nervousness of the patient. The extent to which general nervousness, neurasthenia or hysteria is present is to be determined in order that we may be able to tell whether the heart symptoms are purely or partially nervous in character.

The disproportion between the subjective and objective symptoms is also characteristic. The most important of the subjective cardiac conditions is palpitation, which is described as a temporary derangement of the heart's action as shown by changes in the force, frequency and regularity of its

pulsations, which are perceptible to the patient, and which may be, and frequently are, accompanied by praecordial pain, distress, dyspnoea and anxiety. The knowledge of the disturbed heart's action by the individual himself is the essential element in palpitation and serves to distinguish it from tachycardia and arrhythmia. The most extreme disturbance of rhythm may be attended by distress or a knowledge of disturbed heart action, and, on the other hand, there may be cases of the most distressing palpitation in which no irregularity of the heart's action is present, the condition being entirely subjective. These cases are met with principally in "neurotic" subjects.

Palpitation is sometimes associated with chronic organic diseases of the heart, but more frequently it is independent of organic conditions. The more important causes of palpitation are mental excitement, emotion or depression, hysteria, neurasthenia, digestive disturbances, the abuse of tea, coffee, alcohol, tobacco, infectious diseases and disturbances of the ovaries and pelvic organs. In females, who are more susceptible to the condition, it is more common at the time of puberty, the menopause, menstruation or lactation.

The symptoms of palpitation are variable. As a rule, the attacks are paroxysmal in character and the onset is sudden. The patient is conscious of a disturbance of the heart's action. He may complain of throbbing, dyspnoea, praecordial pain and anxiety; the latter symptom may be pronounced and entirely out of proportion to the other symptoms.

In the milder forms of the condition there may be nothing more than a slight fluttering of the heart and a sense of air hunger or "goneness." The pulse rate varies; it may reach 160 or more, and it is rarely under 100. There may be a great flushing or cold, clammy skin. Physical examination of the heart is usually negative. Inspection shows cardiac impulse diffusible and forcible, with throbbing of the external vessels of the neck. Auscultation shows the sounds clear and ringing with accentuation of the second sound at the base. A murmur may

be heard in some anaemic or neurasthenic cases. The attacks may be transient or last for days.

There is a condition commonly known as irritable heart, which is seen more often in soldiers, laborers and athletes. It may be produced by mental excitement or muscular exertion. Palpitation such as described is to be distinguished from the comparatively rare cases in which the heart's action is rapid and irregular, or both, but in which no subjective sensations are produced. Some of these cases are more or less normal, and some are due to exhaustion and other causes. They are not cases of palpitation because there are no subjective sensations, but they are cases of tachycardia or arrhythmia.

Palpitation due to organic heart disease is to be distinguished by murmurs and physical signs present both during and between the attacks of palpitation. The subjective sensations of palpitation are likely to give alarm to the patient. This may be a marked feature in some cases. Fear plays an important role, and if we can get the mind quieted and make the patient believe there is no real danger to life, much will be accomplished in the way of treatment. If there is pallor, cold extremities and a contracted pulse, a rapid diffusible stimulant, such as nitro-glycerin, aromatic spirits of ammonia, camphor, Hoffman's anodyne or whiskey, should be given, with hot drinks and hot external applications or a mustard plaster to the praecordial region. If, on the other hand, the surface is warm and the face is flushed, with a full, bounding pulse, stimulants are contra-indicated, and it is better to apply an ice bag to the praecordial region and head and give a full dose of bromides, with or without aconite or veratrum, allowing the patient to have cold drinks or bits of ice. In neurasthenic and hysterical subjects veratrum or hyoscyamus, or both combined, may be given with bromides. In case of an overloaded stomach, a hypodermic of apomorphia will empty the stomach quickly and give relief by its relaxing influence. Pressure over the pneumogastric nerve in the neck or the ovary will sometimes give relief. In some instances

walking or exercise will give relief, but in most cases it is best for the patient to be quiet and in the recumbent position. When the above measures fail or seem slow of action, a hypodermic injection of morphine should be given. Nothing is so efficient in allaying the extreme fright and agitation present in some cases. This remedy should be given without hesitation or delay when indicated. In the intervals between attacks warm baths are useful, but Turkish baths and depressing methods of all kinds should be avoided. Diet should be such as is easily digested, and articles known to cause flatulency should be strictly avoided. Tea, coffee, alcohol and tobacco should be prohibited. All forms of nervous or emotional excitement or muscular over-exertion should be avoided. Iron, arsenic, and nux vomica are to be used in cases of anaemia. If the heart muscle is weakened, digitalis or strophanthus are indicated.

Tachycardia is a very interesting and puzzling derangement of cardiac action, which appears in paroxysms of varying duration and intensity, and not dependent upon organic heart disease. The attack is not generally attended by subjective sensations. The disturbance of rhythm is manifested by great rapidity of the heart's action, the pulsations ranging from 160 to 250 or more to the minute. A rapid action of the heart is more or less normal with some persons, the pulsations ranging from 90 to 100. In valvular heart diseases the pulsations may sometimes reach 140 or 150. In palpitation the pulsations may sometimes reach 160, but rarely more, so that the very rapid and paroxysmal action is the distinguishing feature of tachycardia. There are two forms—essential or neurotic, and symptomatic tachycardia.

The chief causes of the symptomatic form are tumors; blood clots, or softening of the brain or spinal cord; aneurysms, tumors or enlarged lymphatic glands in the chest or neck; gastro-intestinal or pelvic irritation; thyroid diseases; enteroptosis; various forms of toxemia and organic heart diseases. The common causes of the neurotic or essential form of tachycardia are chiefly

the same as those conditions which cause palpitation, the two conditions being very frequently associated.

In the essential form there is no clinical evidence of structural change, the term essential being used to distinguish cases in which paroxysms of excessively rapid heart action furnish the only clinical evidence of cardiac disease.

There are no anatomical changes that can be definitely associated with the essential paroxysms, and no pathological basis upon which an explanation of this rare and peculiar condition can be made.

Two things are necessary if rapid action of the heart is to be considered as essential paroxysmal tachycardia: First, a rate of at least 160 to the minute in an apparently healthy heart, and, second, the onset and termination of the attacks must be so sudden as to give them the character of paroxysms.

The symptoms of tachycardia are made up of recurring attacks of "heart hurry." The paroxysms come on with suddenness, and, as a rule, without warning. Sometimes vertigo and ringing in the ears precede the attack. The pulse is small, compressible and sometimes irregular. Sometimes it is throbbing and of good tension and volume. Respiration may be increased, but there is usually not much dyspnoea. The skin is pale at first, but soon becomes flushed and the expression is anxious. Unless palpitation is associated with the attacks, there is not very much mental suffering and distress. In some cases the patient may not be even aware of the rapid action of the heart. In most cases the attack is not very long and subsides suddenly. There are no after-effects, except a feeling of fatigue or oppression. The condition is to be distinguished from palpitation by the absence of subjective sensations and the less pronounced dyspnoea, praecordial pain and mental anxiety, and by the more rapid heart action. Prognosis is usually good as far as danger to life is concerned, but there is always an element of uncertainty in cases of prolonged "heart hurry."

In the majority of cases the general

health is not much impaired, but the course is likely to be chronic and complete recovery is very rare. The attack may be expected to terminate favorably and abruptly, but there is no certainty as to when there will be a return.

The indication for treatment is to arrest the paroxysm and prevent its return by removal of its cause. Theoretically, digitalis is indicated, but its action is slow and it often entirely fails. An ice bag may be applied to the praecordia; vigorous friction of the upper portion of the spinal column and pressure on the pneumogastric nerve in the neck may be tried. The whole question of treatment may be considered along the general lines laid down for the treatment of palpitation.

Arrhythmia is the expression used to denote a deviation from the normal heart rhythm. Simple irregularity may exist for a long time without any apparent ill effects. The irregularities are manifested with reference to time, force, frequency and distinct missing or various combinations of one or more of these features. There are many conditions that may act as causes of the irregularities. Convalescence from infectious diseases, like typhoid and pneumonia, diabetes, gout, epilepsy, digestive disturbances and poisons such as tea, coffee, alcohol, tobacco, digitalis and lead, are the most frequent.

Arrhythmia may exist for a long time and only be discovered accidentally. When it exists with palpitation or great weakness or cardiac dillatation, it is more likely to be noticed.

The functional or reflex character of the irregularity is to be determined by the presence or absence of cardiac conditions, indicating organic disease.

Prognosis depends upon the cause; when due to causes outside the heart itself, it is favorable as a rule. This point may have an important bearing with reference to medico-legal and life insurance questions.

When the two sounds of the heart are heard close together, with a long pause, the outlook is more serious.

In many cases of irregularity no treat-

ment is indicated aside from physical training and general hygienic measures. The removal of the causes, such as gastro-intestinal and toxic agencies, is indicated. When due to heart disease, such remedies as iron, arsenic, strychnine, digitalis and nitro-glycerin should be given according to symptoms present. In pure neurotic cases of pronounced type, valerian, camphor and bromides are useful.

Brachycardia, or bradycardia, is a disturbance exhibited by slow heart action. The condition is physiological in some cases.

Pathological cases are symptomatic or those associated with other conditions, and neurotic are those associated with or due to nervous conditions. Marked slowness of cardiac action frequently follows convalescence from such diseases as typhoid, pneumonia, gastro-intestinal and hepatic disorders, anaemia, gout, diabetes, asthma, blood poisoning, uraemia and alcoholism; neurotic cases from such conditions as epilepsy, hysteria, neurasthenia and mania.

The sole characteristic of bradycardia is slow cardiac action, which may be either temporary or permanent. If it is of a paroxysmal nature, both the onset and termination are apt to be sudden. During the attacks the patient may suffer from syncope or become unconscious. Prostration may be marked, especially in cases associated with true heart disease. The heart beats less than 60 and may be as low as 20 per minute. Cardiac impulse and heart sounds are weak. The diagnosis is made solely by the slow heart action. Prognosis is governed by the causes. In cerebral and heart cases it is grave. In other cases it is more favorable. Rest in the horizontal position is indicated, especially in cases due to heart disease. Such remedies as atropine, strychnine, caffeine, nitro-glycerin and ammonia may be given a trial. In the intervals the general health should be built up, and whatever acts as an exciting cause should be sought out and removed if possible.

Angina pectoris, sterno-cardia or breast-pang is an attack of agonizing pain in the region of the heart, with more or less disturbance of cardiac action, usually accompa-

nied by a feeling of constriction of the chest and intense anxiety amounting to a sense of impending death. It is not really an independent disease, but a group of symptoms associated with morbid heart conditions, especially sclerosis of the root of the aorta and changes in the coronary arteries. True angina pectoris, which is a rare disease, seldom occurs as a pure neurosis, though sometimes it may be the only outward clinical sign of disease. Nothnagel describes a vaso-motor form of angina. In cases of excessive smoking angina is sometimes the result of chronic tobacco poisoning without any other apparent changes in the heart. Similar attacks may occur sometimes after strong emotional excitement, but they have more or less connection with certain forms of hysterical and neurasthenic attacks. True angina pectoris is much more often seen as a symptom of and in association with diseases of the heart and arteries. In a general way it may be said that there are two forms of angina pectoris—one incurable and likely to end in death, and the other curable and not likely to end fatally. In accordance with this idea, Osler, Walshe and others speak of true and false angina. These terms are used for convenience to distinguish mild from grave cases. Huchard classifies purely neurotic cases which are not likely to end fatally as pseudo angina.

Three forms of pseudo angina are recognized by authors—the reflex, the vaso-motor, and the toxic. All three forms blend into each other to a greater or less extent. The reflex form is the most common, and is most likely to originate in the abdominal organs; the vaso-motor form may originate in the abdomen or elsewhere; the toxic form is due to toxic agencies, the most noticeable of which is tobacco. Though not strictly scientific or accurate, this classification is justified by usage, as it simplifies the study of the subject.

True angina, which always carries with it the possibility and even probability of death, is usually associated with and thought to depend upon structural heart disease. The various lesions found in fatal

cases all seem to show some interference with the blood supply to the heart muscle. Sclerosis of the coronary arteries is the most frequent. It is to be remembered that these conditions are predisposing only, as an extreme degree of coronary sclerosis is shown "post-mortem" to be frequent, but a majority of these cases present no symptoms of angina pectoris. Other causes or influences must also be present, such as an impoverished condition of the blood, some abnormal or excessive cardiac irritation, or excessive physical exertion or emotional excitement. Either or all of these may act as immediate exciting causes and bring on paroxysms of true angina.

The essential difference between true and false angina is that in pseudo angina the attacks seem to be independent of the disease of the heart or arteries.

The part played by age and by sex is an important factor in true angina. It is a disease of adult life, and occurs almost exclusively in men beyond the age of forty. They are frequently well to do and more or less sedentary in mode of life, and appear to be in good health up to the time of the first attack. The greater frequency of arterio-sclerosis and the conditions favorable for its development in men at this age also accounts in part for its more frequent occurrence.

Gout, syphilis, alcohol and tobacco are also important predisposing causes of angina.

Any condition that will raise blood pressure in the cardiac arterial vessels, causing a diminished amount of blood to the heart muscle, will act as an exciting cause of angina pectoris. Walking just after a hearty meal, running to catch a train or car, walking rapidly upstairs or upgrade, walking with a raw, cold wind blowing in the face, emotional states, such as grief, anger, fright or worry, or intense mental exertion, may intensify cardiac action and act as exciting causes of angina pectoris.

The exciting causes of pseudo angina are not excitement or bodily exertion. The origin of the pain seems to be more or less spontaneous, and it is no doubt due to per-

ipheral, vaso-motor or toxic influences. I recently saw a case that seemed to be due to a terminal uraemia in a case of chronic nephritis.

In true angina the paroxysmal attacks of pain come on suddenly after extra physical exertion or emotional excitement, and with the pain there is a sensation or squeezing of the chest and a sense of impending death. The duration of the attacks is short—from two or three minutes in most cases to twenty or thirty minutes in some cases.

In pseudo angina the attacks are much longer, lasting one or two hours or more. The attacks occur much more frequently in the day because the exciting causes are more likely to be present. The attacks may occur at night because of the increase of blood pressure due to the recumbent position, and because the increased blood pressure is slower in subsiding, the night attacks may be more severe and prolonged.

In pseudo angina the attacks frequently occur at night. In true angina the first attack may prove fatal, or attacks may recur at varying intervals for ten to fifteen years.

As a rule, the attacks come on suddenly and without warning, and are of such severity as to compel the patient to stop and lean on some object for support, hardly breathing lest any effort increase the pain.

Whatever the attitude of the patient, the position is upright instead of horizontal, as the recumbent position increases blood pressure and intensifies the pain. The attack often leaves as suddenly as it comes, and leaves the patient apparently as well as before the attack occurs, except a feeling of weakness and depression.

In pseudo angina the attack may terminate in an attack of palpitation. The usual seat of pain is under the middle portion of the sternum, sometimes at the apex beat or tip of sternum.

In pseudo angina the pain may originate in some distant part and localize in the cardiac area. Whether the pain originates in the praecordial region or not, it is always radiating in character. The pain of true angina is described as frightful, agonizing, cutting, tearing, crushing or burning. In

some cases the sense of pain may be lost in the sensation of constriction, dyspnoea and anxiety. The patient is motionless at the height of the pain, but may be restless at the beginning or termination of the attack.

In pseudo angina there may be restlessness all through the attack, and the recumbent position may be preferred by the patient. The expression is anxious, the extremities are cold and the pulse variable. Sometimes the pulse remains unchanged, but it is usually small and tense, regular or irregular. The heart sounds are clear, but feeble. The cessation of the pain is usually followed by vomiting.

All praecordial pain is not to be regarded as true angina, it matters not how sudden or severe it may be.

The two conditions most likely to be mistaken for true angina are intercostal neuralgia and pseudo angina. In each case the sensation of constriction and the fear of impending death, the two essential elements of true angina, are wanting.

In intercostal neuralgia tender spots along the course of the fourth and fifth intercostal nerves are usually present. The pain is more stab-like and shooting in duration and character, and neuralgic pains are met with most frequently in females and young persons of either sex who are apt to be anaemic or otherwise neurotic.

In differentiating pseudo angina the age, sex, condition of the heart and arteries, the influence of excitement or exertion on the paroxysms and the characteristics of the pain are all to be considered. The pain, though intense, is agonizing, chiefly because of its location in the cardiac region and the sense of oppression that it produces, but it is lacking in some of the essential characteristics of true anginal pain.

In the toxic form of pseudo angina, which is frequently due to tobacco poisoning, the pain is frequently subordinate to a feeling of oppression, vertigo, syncope, praecordial anxiety, pallor and cold extremities.

In the pronounced neurotic form the patient may become cold, rigid and cataleptic.

In general, it may be said that the attacks

of severe praecordial pains in females or youthful persons of either sex are not true angina, and that stiff arteries or signs of heart disease associated with severe praecordial pain favor the supposition of true angina. Prognosis of true angina is always grave. There is always the possibility and even probability of death during a paroxysm. The condition is incurable, but there is no way of telling how long a patient may live. Other things being equal, the more severe and prolonged the attacks the more danger of death. The more easily the attacks are brought on the more grave the complaint. Increasing frequency of attacks is a bad omen.

Prognosis of pseudo angina is that of the underlying neurosis. In youthful subjects death is not likely, and frequently a permanent cure is possible.

The treatment of true angina consists of measures for the relief of the paroxysm and the care of the patient in the intervals. Of many remedies suggested, the two most reliable are the nitrites and morphine. Nitrite of soda is too slow in the attacks; nitrite of amyl and nitro-glycerin are more reliable. Nitrite of amyl may be inhaled from a few drops on a handkerchief. The dose should be repeated every two or three minutes for a few doses if the first fails to give relief; or nitro-glycerin in one-minim doses of a one per cent solution, dropped on the tongue or given hypodermically, and repeated every two or three minutes until two or three doses are taken or relief obtained. A tablet containing the proper dose may be dissolved on the tongue.

The nitro-glycerin tablets or the nitrite of amyl in pearls or a bottle should be carried about by persons subject to sudden attacks for instant use. Morphine, one-fourth to one-half grain, hypodermically, should be given in all severe cases without hesitation or delay, as nothing so calms nervous apprehension and fear. A few inhalations of chloroform or ether may be used. In milder attacks of both true and pseudo angina aromatic spirits of ammonia, Hoffman's anodyne, camphor or whiskey in hot water may be used, either alone or in conjunction

with the nitrites. In cases of pronounced nervous type elixir valerianate of ammonia may obviate the necessity of morphine.

During the intervals, over-eating, undue exposure to inclement weather, over-exertion and emotional excitement should be avoided. The use of alcohol and tobacco should be prohibited or greatly limited.

If regulation of diet and mode of life does not sufficiently reduce the tendency to high arterial tension in coronary and myocardial cases, nitro-glycerin, nitrite of soda or moderate doses of the iodides, given regularly, may be required. In cases of beginning cardiac insufficiency, digitalis or strophanthus in conjunction with the nitrites and iodides may be tried. Strychnine may be permissible in some cases of weakness of the heart muscle.

ELEMENTS OF INSANITY.*

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In the study of the natural sciences, including all departments of medicine, our knowledge comes to us from without—through the medium of the senses—and it has been well named “mediate experience,” in contradistinction to that form of knowledge obtained by introspection, which is termed “immediate experience.” It is this last named method which is used in the investigation of the problems of psychology and psychiatry.

To illustrate: In the study of anatomy, microscopic and macroscopic, whether we investigate bone or muscle, artery or vein, nerve or cuticle, not once is consciousness interrogated; this science has no subjective side.

So likewise, for the most part, is it with that great and coordinate science, physiology; we see here anatomy in motion; we observe the circulation of the blood and lymph, the absorption of food from the ali-

mentary canal, and its conversion into living tissue. Now, if we inquire whence comes all this activity, this multifarious motion that we call physiology, it is seen to arise in one tissue only, the nervous. Its unit is the neuron, composed of a nerve cell and fibre; the cell develops the motion and the fibre conducts it. From these neurons originate all the spontaneous activity of the more highly organized animals. They cause the contraction of the voluntary muscles that change the position of the limbs; they are distributed to the heart and blood vessels, and cause the blood to circulate to the muscular coats of the alimentary canal, and to every gland. In every department of physiology the over-ruling prominence of the nervous system is apparent.

But nerves have other functions than to originate power and transmit it. There are sensory, as well as motor nerves, whose phenomena cannot be understood by objective examination alone, but require for their elucidation other methods of research; that is, the interrogation of consciousness, the examination of the investigator's immediate experience. The application of stimuli to sensory nerves produces characteristic reactions that are understood only by the remembrance of former experiences of like nature in ourselves. The hypothetical molecular motion, started by the stimulus at the periphery of the nerve, is propagated to cells in the cortex, where it becomes known as sensation; but the word sensation is a symbol of a mental process, and cannot be studied objectively. There is no way by which it can even be conceived except through our consciousness. With the vibration of the brain cell then, the science of physiology ceases; its correlated phenomenon sensation belonging to psychology. This science only in the last twenty-five years has been stripped of the bonds imposed by popular theology, and divorced from the barren subtleties of metaphysics, with which it was fettered, and advanced to the position of an experimental science. Psychology is defined by its most eminent living exponent, Wilhelm Wundt, to be the science of inner or immediate experience. To quote his words, “A stone, a plant, a tree,

* Delivered to the students of the Medical Department of the Lincoln Memorial University.

a ray of light are as natural phenomena objects of mineralogy, botany, physics, etc., but in so far as they arouse in us ideas, they are at the same time objects of psychology. For psychology seeks to account for the genesis of these ideas, and for their relation, both to other ideas and to those physical processes, not referred to external objects, such as feelings, volition, etc. There is, then, no such thing as an inner sense, which can be regarded as an organ of introspection, and thus distinct from the outer senses of organs or objective perception. Ideas, whose attributes psychology seeks to investigate, arise through the outer senses no less than do the sense perceptions on which natural science is based, while the subjective activities of feeling, emotion and volition, which are neglected in natural science, are not known through special organs, but are directly and inseparably connected with ideas referred to external objects. It follows then that the expression, outer and inner experience, do not indicate different objects, but different points of view from which we start in the consideration and scientific treatment of unitary experience. As the science of immediate experience, it is supplementary to the natural science, and any fact can, strictly speaking, be understood in its full significance only after it has been subjected to the analysis of both natural science and psychology."—*Wundt's Outlines of Psychology*, pages 2 and 16.

The elements of psychology are sensations and feelings. Sensations have already been defined. They are the bases of ideas. Feelings may be described as the impressions that we receive from ideas; the way we are affected by them, whether pleasantly, unpleasantly or indifferently; they are components of the emotions. Physical compounds are ideas, emotions and volitional processes. These elements and their compounds, taken with their interconnections, associations and memorial processes, constitute the sum total of a man's conscious life—his existence. These physical phenomena are based upon, and the product of physical phenomena in nerve tissue.

From the above proposition it is obvious

that, for the normal manifestation of the emotions and intellect a sound nervous system is necessary, for, if each manifestation of mind is based upon and the result of activity of nerve cells and fibres, it follows that with their disordered action we have disordered mentality, *i.e.* insanity, just as we have death or unconsciousness with their ablation.

Insanity is to psychology what pathology is to physiology, and its elements are to be looked for in the disorder of psychological elements and compounds, such as disordered sensation, producing false ideas, which usually manifest themselves in hallucinations of sight and sound, disturbed feelings, resulting in the excitement of mania, or the depression of melancholia, impairment of attention, and in consequence want of connected thought and language.

Contrary to the popular conception of insanity, the chief symptom of the disease is not impairment of the intellect, but disturbance of the feelings. Delusions, disconnected ideas, and impairment of volitional processes grow out of and are the results of unnatural emotional activity. This is evident from the classification of insanity into mania, melancholia and dementia.

In mania there is excitement, and in melancholia depression of the feelings, and each, if unchecked by treatment, terminates in dementia, which may be defined as induced idiocy. Elevation of the feelings is the initial symptom of mania, while depression precedes melancholia.

A gently sinuous line like the above may be taken to represent the natural healthy flow of the spirits, the slight elevations and depressions representing their natural variation. In the commencement of mania the elevation is higher and more persistent than is natural to the individual; his ideas are more vivid, their associations better, while there is an accompanying feeling of strength and well-being. As the disease progresses ideas succeed each other with greater and greater rapidity, while the abil-

NOTE—Dualists deny that mind is the product of physical processes, and Wundt has invented the phrase "psycho physical parallelism." However, the bizarre hypothesis of a psycho-physical parallelism obscures but little the elucidation of the phenomena of insanity.

ity to fix the attention is greatly impaired, and finally lost. Logical thought and the voluntary activity of the constructive imagination are replaced by the wildest play of uncontrollable fancy. At this stage illusions, delusions and hallucinations arise from hyperesthesia of the sensory and ideational centers, unchecked by reason of loss of the power to compare and observe the relations of ideas.

As I have said, terminal dementia is induced idiocy, and represents organic change brought about by long continued mania or melancholia, but the progress of mania to dementia is, as a rule, much more certain and rapid in mania than in melancholia; therefore exists the greater necessity for prompt and vigorous treatment, for in terminal dementia the patient has passed the point beyond which restoration may be expected.

When complete, the intellect is abolished, and his emotional nature fails to respond to the strongest stimulants. After the storm of mania, or the protracted psychalgia of melancholia, ideation is restricted to a minimum, the emotions can no longer be aroused, and the sufferer finds rest in a condition that is painful for his friends to contemplate, but the most fortunate for him when his malady cannot be cured.

A TREATMENT OF FRACTURED FEMUR.*

BY J. F. GALLAGHER, M.D.,
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It may be said without fear of serious contradiction that many surgeons and most general practitioners approach the treatment of fractures with no little misgiving. The dislike for this part of practice may be found, as in many other phases of our profession, not so much to the lack of skill as to a lack of knowledge of the best procedure to adopt. Waiving this, however, we are conscious of the fact that an error in the treatment of fractures may be followed by permanent impairment of form

or function of a limb which may not only seriously affect the patient's future, but be a constant source of chagrin to the physician.

It is with no sense of apology, therefore, that I would briefly call your attention to an appliance for the treatment of fractures of the femoral shaft. Though comparatively little used in this section of the country, it is at once an extremely simple and most efficient apparatus for the treatment of this condition. I refer to the Hodgen splint.

This device is by no means new, it being a modification, conceived by Hodgen many years ago, of the old Nathan Smith anterior splint. The original Hodgen was difficult to keep in order, and it is due to Dr. George S. Brown, of Birmingham, Ala., that we have the splint in the perfected form as shown here. It is the original Hodgen splint and not Brown's efficient modification that we see pictured in most text-books which, only too frequently, refer to the splint in the briefest manner (if at all), though in the main commendatory.

At a risk, therefore, of being somewhat tiresome, I shall briefly describe the splint, for a comprehensive working knowledge cannot be gained from most of the text-books on surgery.

Let me say in the beginning that any blacksmith or tinsmith can make the splint in a very few minutes if given the dimensions. The material is 3-16 brass or iron, or No. 4 wire, all in one piece. The distal extremity is six inches wide and the proximal eight, the ends of the latter being connected by an arch of such height as to pass well over the thigh. The length over all is 36 inches. On the upper side of the frame four loops of smaller wire are placed, those nearer the proximal extremity being 9 inches from the end, while those toward the distal extremity being 10 inches from its respective end. These loops are for the supporting cords or straps. Twelve inches from the proximal end the splint is bent at an angle of about 170 degrees. This angle will allow the limb to assume a position which gives most comfort, viz.: that of partial flexion.

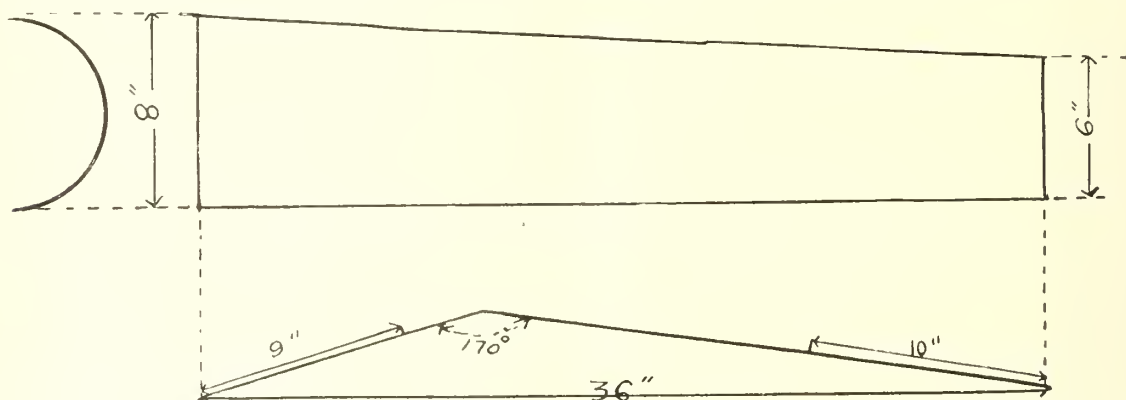
* Read before the Nashville Academy of Medicine.

To the supporting loops are attached adjustable straps with buckles, or small cords equipped with test-blocks, and are passed through a ring about 14 inches above the frame. The latter is attached to a rope or sash cord swung from the ceiling or some convenient support not connected with the bed.

A piece of ordinary, unbleached domestic, or light canvas, is so attached to the frame

which has been attached to the ends of the adhesive on the leg, is tied to the cross piece at the end of the splint. The splint containing the limb is now suspended on the sash-cord hanging from the ceiling.

A pair of spring scales may be interposed between the rope and the ring for the measurement of the amount of traction; first weighing the limb and then moving the bed away from the point of suspension un-



as to form a hammock in which the limb is to rest. This is draped across so as not to form wrinkles and pinned on either side with safety pins.

The preparation of the limb is the same as one would adopt for the application of a Buck's extension. That is, the limb is shaved on each side, dried and two-inch adhesive applied, extending well above the knee. The malleoli are protected and a spiral reverse bandage thrown around the limb, paying especial attention to the region of the ankle, as here the adhesive will loosen if not held firmly in place by the bandage. To the free ends of the adhesive short pieces of bandage are attached which are to hold the limb to the distal extremity of the splint. This will supply traction when the splint is in place, and, in fact, is the only attachment the limb has to the splint.

The limb and splint having been prepared, we are now ready for the application. With the limb in the hands of an assistant standing at the foot of the bed and making steady traction, the splint is slipped on the limb, the loop over the thigh, and passed well up to the perineum. The bandage,

til an additional ten or fifteen pounds registers, which, of course, is the amount of traction imposed upon the limb.

The eversion is slightly over-corrected (as well as the normal longitudinal axes of the limb preserved) by adjusting the four straps, or cords with tent blocks, as the case may be. The bed is pushed to one side so as to slightly abduct the limb. The pull on the limb will have a tendency to drag the patient toward the foot of the bed so the patient must be instructed to keep well up to the head. Indeed, he will soon learn that the constant traction of ten or fifteen pounds will overcome the muscle-spasm and give more comfort when in the correct position, so this advice, as a rule, will not have to be repeated.

The splint at all times must be entirely suspended. Rest upon a pillow or bed or bedstead will defeat every object of the appliance. After attention to the splint is nothing. An occasional adjustment of the supporting cords of straps is all, and this is required very seldom.

The principle on which the splint works is as simple as the application and its mainte-

nance. The femur is surrounded more completely and by larger muscles than any other bone of the body. After fracture, gravity and muscular contraction give rise to the deformity. By supporting the limb in the hammock and preserving the normal axis of the shaft of the bones, gravity is overcome. This may be done, yet the deformity due to muscular contraction not be dissipated. By making constant and sufficient traction, not only is the muscular spasm overcome, but the muscle itself is paralyzed and the lower fragment of the fractured bone is drawn gradually in the axis of the bone to the place from which it came. The ham-string muscles behind and the quadriceps extensor anteriorly form strong longitudinal bands when stretched taut and which efficiently splint the two fragments of bone.

From the beginning the patient may be allowed to sit up in bed with a back-rest to eat, read, write, use the bed-pan and move about to facilitate the changing of the bed linen. These may be done without the slightest fear of disturbing the bones at the seat of fracture, for when the body is moved the limb in the splint moves as a whole from the hip joint, the easiest point for motion to occur.

That this splint is efficient no one who has ever used it will dispute. I have never seen more than a half inch of shortening following its use in simple fracture. In most cases there is none, and in a few I have seen a positive increase in the length of the limb. Unfortunately, I have never kept a record of the cases treated, as most of them occurred in the hospital in which I was a resident, or in consultation since beginning active practice. In the latter cases it has never been necessary for me to return to the patient, as the attending physician was always able to make the slight adjustments, if necessary. The physicians report, however, results entirely satisfactory and become ardent advocates of the appliance.

The application of this splint is by no means limited to the treatment of simple fractures. If it is efficient here it is invaluable in treating compound fractures of the femur. A piece of the hammock may be

cut across, unpinned opposite the wound and thrown to the opposite side when a dressing can be applied without disturbing the fragments.

All of us realize the dangers of a prolonged recumbent posture in the aged, which is necessitated by the ordinary treatment of intra-capsular fracture of the femur. The treatment of this condition with a Hodgen splint, by which we apply traction and rest, letting the patient sit up, is most satisfactory.

The mother of a member of this Academy was so unfortunate as to have intra-capsular fractures of both hips, each at a different time, within a year. She was treated with this splint, and he tells me today that, so far as the function of the hips are concerned, the results are perfect.

To summarize, then, I would say that:

1. The splint is cheaply and easily made.
2. It is easy to apply and easy to keep in order.
3. It gives the patient almost complete comfort during his six weeks' stay in bed.
4. The results are in nearly every case all that is desired.
5. It may be used to great advantage in other affections of the lower extremity, notably intra-capsular fracture.

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EXTRA UTERINE PREGNANCY.*

BY ROBERT CALDWELL, M.D.,
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This is one of the most alarming calamities, to say the least, that may befall a healthy woman in the prime of life. While its occurrence is comparatively infrequent, yet in the light of its serious consequences it occurs altogether too frequently.

I know of nothing in the whole realm of medicine and surgery that requires more careful consideration, both from the stand-

* Read before Upper Cumberland Medical Society, May, 1911.

point of diagnosis and treatment, especially after the occurrence of rupture.

Extra uterine pregnancy without any modification includes all pregnancies existing outside the uterine cavity, but in this discussion shall only consider the cases of tubal origin, omitting the rare forms such as abdominal, ovarian and tubo-ovarian.

The etiology of this anomalous location of the products of gestation is comparatively unimportant, as it has no bearing upon the treatment except in so far as it may pertain to prophylaxis.

The most important etiological factor in the causation of ectopic gestation is inflammation, and it is not at all necessary that the inflammation be of a severe grade, but it seems that the milder forms are even more important than the severe. Indeed, the inflammation may be of such low grade that it cannot be detected clinically, but only by a microscopical examination of the lining of the tube; this form of inflammation is just as important from an etiological standpoint.

Williams, in a careful study of a series of cases, demonstrated inflammatory changes, not only in all the tubes containing the fetus, but in the tubes on the opposite side also, thus explaining the existence of ectopic pregnancy in both tubes either at the same time or a later period.

Neisser infection, more than any other, predisposes to tubal gestation, not only because it changes the character of the cells lining the tubes, but by also producing false diverticula in the mucous membrane lining the tube.

Barrett claims that 75 per cent of the cases of ectopic gestation have had gonorrhea and that frequently a pus-tube is found on the opposite side.

Tuberculosis of the tube is possibly a more frequent cause than we have formerly believed. Taylor found that forty-two of the patients out of sixty-four extra uterine pregnancies had tubercular tubes. While I feel that this was certainly a very exceptional series, yet it shows that tuberculosis of the tube is a cause to be reckoned with.

Inflammatory adhesions that interfere with the normal peristalsis of the tube, also pressure from without, such as fibroid of the uterus might produce, have been suggested as possible factors in the etiology of extra uterine pregnancy.

The pathology of tubal pregnancy, of course, is the morbid anatomy produced by the above mentioned causes, plus the location of the fetus in the tube; that is, whether it occupies the isthmus, ampulla or infundibulum.

The symptoms of extra uterine gestation are in the typical cases. First, pain following a delayed or missed menstruation from three days to three weeks, but just here let me call your attention to the fact that it is not necessary that we should have a delayed menstruation. While this does occur in the majority of cases, we must not let the fact that no menstruation has been missed banish the thought of ectopic from our minds.

The pain is usually intermittent, beginning in the region of the tube affected, then extending to the whole pelvis, finally radiating over the entire abdomen. It is colicky in character prior to the period of rupture. Pain is not due so much to tension in the tube, produced by growth of the fetus, as to bleeding in the tube acutely distending it, or bleeding into the peritoneal cavity which may be often repeated before bleeding enough occurs that the symptoms of internal hemorrhage may be manifested.

The pain of rupture is very sudden in onset and stabbing in character, followed by collapse and shock, the degree depending upon the extent and location of the rupture.

Second. Bloody flow appearing several days after the date for the normal menstrual period. This flow may be either profuse or scanty, and the character of the discharge is quite different from normal menstrual discharge being very much darker in color,ropy and sticky in consistence due to an excessive amount of mucous.

Some observers claim that the character of the flow is pathognomonic. The association of pain and hemorrhage is indeed an important point to be remembered. In the

great majority of instances pain occurs first followed very closely by the hemorrhage, only a few days or a week at most intervening between the onset of pain and appearance of the flow.

Third. The presumptive signs of pregnancy are usually indistinct, for in a large per cent of the cases the pain and bleeding are manifest before the early signs of pregnancy are recognizable, but in a considerable number of cases nausea and vomiting, discolored and tender nipples, colostrum in the breast, which is only significant in the *primi-para*, enlargement of the uterus, which is somewhat less than it would be in intra-uterine pregnancy, with characteristic softening of the cervix are of great value when they can be demonstrated in the presence of the pain and hemorrhage.

Fourth. Passing of decidual membrane which occurs in about 50 per cent of the cases is an important symptom, but one that led us into error more frequently than any other sign or symptom associated with the condition.

If we are not careful to examine all clots or membranes we may be content to think that an ordinary abortion is to be dealt with.

Diagnosis of ectopic gestation is especially difficult, although very important prior to the period of tubal abortion or rupture.

It is claimed by some that we should be able to make at least a presumptive diagnosis in the great majority of cases, while others insist that a diagnosis cannot be made prior to hemorrhage, either intra or extra tubal. Whatever we should or should not be able to do, the fact remains that only a very small per cent of the cases are diagnosed before rupture, but I am constrained to believe that if we gave these cases the proper consideration, at last half of them would be recognized before rupture. A carefully taken and complete history is all important when ectopic pregnancy is under consideration. It is of more significance than is usually accorded it. I had rather risk a diagnosis on a complete history without a physical examination than an examination without carefully taken history.

Ectopic gestation occurs during the most active child-bearing period of a woman's life between twenty and thirty-five years of age.

It used to be said to occur in women that are relatively sterile and following abortion, but now we are able to go back a little further and say that its occurrence follows infection in the tube, realizing that the relative sterility was due to infection and that the abortion was followed by infection, even though it be of low grade with no distinct clinical symptoms at the time of abortion.

By a careful pelvic examination we should be able to detect the non-tender mass situated on either side, behind or even in front of the uterus, which is not associated with fever.

In the treatment of ectopic gestation many things are to be taken into consideration.

If a diagnosis is made prior to the period of rupture, there is no one who does not endorse the wisdom of immediate laparotomy, and by immediate is understood as soon as the proper surroundings can be secured, whether by the preparation of the home or removal to a hospital, which, of course, is preferable and usually safe as to welfare of patient.

It is in the cases where tubal abortion or rupture has already occurred that so much difference of opinion is manifest. Opinion of the majority is in favor of immediate operation, their contention being that if we have a bleeding vessel it should be ligatured at once that the bleeding may be stopped. This is good theory and excellent logic, but when compared with the facts, do not believe that it will stand the test. Cobb states that 95 per cent will recover from the primary hemorrhage, and Zinke reports sixty-three consecutive cases that were not operated upon at once without death, while in a series of over 500 cases that were subjected to immediate laparotomy, the mortality was 19 per cent, which is very much greater than in cases that are allowed to react.

It is said that it is impossible to tell when the bleeding has stopped, which is quite true, but, on the other hand, it is just as

difficult to determine that we have a continuation of the bleeding. When we consider the fact that tubal abortion is the termination in 50 per cent of the cases, and that rupture occurs in the outer extremity of the tube in the large majority of the remaining 50 per cent, in either event we would not expect fatal hemorrhage, and then to these cases may be added the cases where rupture is between the folds of the broad ligament where it is impossible to have fatal hemorrhage, thus a very small per cent is left in which fatal hemorrhage will quite likely occur, and in this number there will be cases that will succumb before the surgeon can even reach the bedside, hence it seems to me the number in which we would at all be justified in making an immediate section would be very small indeed, very much smaller than the mortality from added shock should we subject every case to immediate operation. We owe a debt of gratitude to the men that have had the courage to wait for a reaction in these cases in spite of weight of surgical opinion. This is a striking example of where it requires more courage not to operate than it does to operate. I realize there are a few cases that may be saved by immediate operation, but they are certainly the exception and not the rule. I think a good plan by which we can occupy middle ground in these cases is immediately on seeing the case to begin preparations for an aseptic operation either by preparing the house or moving the patient to a hospital, should this be deemed advisable. The condition of the patient being carefully noted when first seen and then the change that has taken place during the time of preparation, which at best will consume from two to four hours. Should the patient not have lost any ground dur-

ing this time, I feel that we would be entirely safe in allowing this patient to react before operation, but should she show evidences of continued bleeding after the lapse of this amount of time, I believe we would be justified in opening this case in an attempt to save her life. These are the cases that will die unless surgical interference can rescue them, which is indeed doubtful, but I feel they should have the benefit of any chance that may be left to them.

In view of the small mortality of 5 per cent from primary hemorrhage, I should not think we would ever be justified in making an operation without the best aseptic precautions that can be obtained under the existing circumstances. I do not believe that the "jack-knife and shoe-string" offer us any hope.

When operating upon a ruptured tubal pregnancy it should be done in the least possible time consistent with good work, practically no time given to the removal of blood clots, the largest ones may be hurriedly removed with a few rapid sweeps of the hand.

Conclusions:

1. The importance of low grades of inflammation in the etiology.
2. The extreme value of a carefully taken and complete history in making a diagnosis.
3. By being alert the diagnosis can be made in a considerable number of cases before rupture.
4. Only the exceptional cases should be operated upon during the shock from primary rupture.
5. All aseptic precautions possible should be employed in every case, and that the "jackknife and shoestring" are never justifiable.

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EDITORIALS**LORD LISTER.**

Joseph Lister, Baron, the founder of antiseptic surgery, died at his home in London, England, on February 11, 1912, in the eighty-fifth year of his age.

Graduated in medicine from the University College Hospital, London, in 1854, he went at once to Edinburgh to take a clinical course under Syme at the Royal Infirmary. Here, fascinated by the special consideration which this great surgeon and teacher gave to the pathologic side of his work, he remained six years as resident surgeon and lecturer on surgery. During this time he wooed and won Syme's daughter.

In 1860 he was called to Glasgow, where he was made Professor of Surgery in the University of Glasgow and surgeon to the Glasgow Royal Infirmary. It was while located here that he first made use of carbolic acid as an antiseptic in clinical surgery, in 1865, and two years later delivered his first address upon the subject at the Dublin meeting of the British Medical Association. In this address for the first time he stated his belief that suppuration in wounds (infection) was caused by contamination from floating particles in the air, instead of by oxygen, as had been previously taught. At the same time he announced that suppuration might be prevented by the use of an agent (carbolic acid) capable of destroying the constaminating material, without the exclusion of air from the wounds.

In 1869 Lister was called back to Edinburgh to fill the chair of Clinical Surgery in the University of Edinburgh, made vacant by the retirement of his father-in-law

from active work. Here he continued his investigations into the nature and cause of infection and the relative value of various antiseptic agents. In 1877 he accepted the Professorship of Clinical Surgery in King's College, London, retaining this connection during the remainder of his life.

In a very real sense Lister was the father of modern surgery. In order to realize the value of his work, it is only necessary to recall the conditions which prevailed in the hospitals prior to his advent. The mortality from tetanus, hospital gangrene and other forms of septic infection was appalling. In the larger institutions surgery was undertaken with a dread shared alike by operator and patient. Primary union in operative wounds was the exception instead of, as now, the rule, and "laudable pus" was looked upon with friendly tolerance. Accidents and injuries resulting in open lesions, however trivial in themselves, were regarded with the gravest apprehension as certain to be marked by infection and prolonged convalescence. Compound fractures were scarcely less formidable than brain surgery is today. A penetrating gunshot wound of the abdomen or thorax meant the death of the victim almost as inevitably as though the heart had been pierced. Chloroform and ether had been in general use for a considerable time, but the surgical procedures rendered possible by them were rarely attempted because of the ever present fear of sepsis. The evolution of surgical technic as we know it at the present time had not even begun.

Such were the conditions when Lister came upon the scene. By reason of an investigative turn of mind, the pathological side of surgery appealed to him with peculiar force, and the research work which the occasion demanded found him willing and prepared. With that patience and enthusiasm which invariably characterize the labors of great investigators, he attacked the problems which had so long barred the progress of his chosen profession, and, solving them, had the rare privilege of living to see and glory in the full fruition of his efforts.

Measured by the only true standard of a useful life—service to humanity—Lister ranks with the world's greatest benefactors. At first discredited in his own country, as is so often the case, he was later showered with honors both at home and abroad. Probably no other medical man ever received so many degrees and decorations from foreign countries, and he was one of the very few whom England has distinguished with the title of Baron. But these must have seemed empty honors to the man who realized that he had been the instrument under Providence of mitigating suffering and saving countless lives of his fellow-mortals.

A. B. C.

MCCORMACK UNDER FIRE.

Under the guise of a bill introduced at the present session of the Kentucky Legislature to repeal the law authorizing the Governor to fill vacancies upon the State Board of Health from nominations made by the several state medical societies, a most vicious attack was made upon Dr. J. N. McCormack, the medical laws, and the medical profession of the state in general. At the request of its author, the bill was referred to the Committee on Kentucky Statutes and made the occasion of a sweeping investigation, evidently designed to discredit Dr. McCormack before both profession and the people at large.

Taking advantage of the attack, or perhaps inspiring it, the notorious National League of Medical Freedom, which has for several years antagonized the medical profession and its every attempt to promote health interests, deluged the desks of the legislators with "literature" intended to prejudice with false and sinister misrepresentations any who might be inveigled into reading it.

It is with peculiar satisfaction that we chronicle the complete and ignominious failure of the well-laid scheme. The committee's report not only exonerated Dr. McCormack, but commended him and his long and faithful conduct of the Board of Health

affairs. We congratulate the people of Kentucky. No commonwealth in the Union has a more efficient set of medical laws, and in none have they been administered with greater fidelity and with more conspicuously beneficent results. If every state were blessed with a health officer as fearless, competent and tireless in his zeal, the cause of public health would be advanced in keeping with its importance and with progress along other lines.

Personally, Dr. McCormack needed neither vindication nor defense before the members of the medical profession. His labors in the national field have been as successful as the results which have followed and will continue to follow them will certainly prove enduring. And as the necessary and inevitable outgrowth of these labors, immeasurable increase in the health and happiness of the people must result through the activities of an awakened and united profession. No medical man of the present generation in America has rendered greater service to humanity.

A. B. C.

COLLIER'S WEEKLY AND FAKE MEDICINE.

For several years the policy of this very excellent weekly has been to educate the public against the frauds of the patent medicine exploiter, fake medical and quasi-medical institutions of all kinds. To the best of our knowledge they were the first to undertake this campaign of reform, refusing advertisements from the many varied classes of illegitimates, and thereby loosing thousands of dollars annually; publishing the strong articles of Samuel Hopkins Adams and making their editorial pages ring with the vicious nature of these blights upon the American people. They have, by their continued efforts, gained the assistance of other publications, until at this writing there is a long list of creditable and reputable daily papers, weekly publications and monthly magazines who refuse advertisements of drugs of questionable value or remedies making false claims. That their

efforts have been of value in making medical journals "clean house" can be readily seen by glancing at the advertising pages of any of our so-called better journals. We are pleased to see the announcement from our much admired and highly prized contemporary, *Surgery, Gynecology and Obstetrics*, that they will in the future conform to the requirements of the Council on Pharmacy and Chemistry of the A. M. A., and it is to be sincerely hoped that the State journals not yet in line will soon fall in with the procession and keep their pages clean.

We have in the past been unwittingly guilty of permitting reputable houses to advertise products which had not been submitted to the Council, but we promise more rigid censorship in the future.

It is the duty of the profession to give their support, endorsement and encouragement in every possible way to *Collier's Weekly* for the good they have done and are still doing in the commendable fight upon a group of typical American frauds.

HEALTH CONFERENCE.

A meeting of the State Health Officers Association has been called for April 2-4. This will be the second meeting of this organization, the first having been held in 1910. Much good is expected to come from this getting together of the men engaged in the public health service of the State. It is only in this meeting that the county and city health officers can consider the problems with which they have to deal in the protection of the health of the whole people and discuss their plans together. A tentative program has been arranged for the meeting, and on it appear the names of men of national prominence as well as those of some of the best in Tennessee. Dr. Wickliffe Rose, widely known as an educator and recently very prominent in public health affairs by reason of his official connection with the Rockefeller Sanitary Commission, has signified his willingness and pleasure to come to Tennessee and take part in this meeting. It is hoped to have Dr. H. W. Wiley, whose magnificent work for the pro-

tection of the pure food and drugs supply of the nation has attracted world-wide attention and has earned for him the lasting gratitude of a nation, to deliver an address at the opening meeting to be held one evening during the session. Passed Assistant Surgeon Lumsden, of the United States Public Health and Marine Hospital Service, will contribute a paper on some phase of typhoid fever of interest to health officers in particular and of great importance to everybody. Dr. Lumsden is undoubtedly one of the best informed men in the whole country on typhoid, having given a great deal of time to the study of this disease. Hon. C. P. J. Mooney, editor of the *Memphis Commercial Appeal*, will read a paper on "The Relation of the Press to Public Health," or a subject of like nature. Mr. Mooney is recognized generally as a very able man, and has given a great deal of study to health problems. He has always contributed his help in every possible way for the advancement of the health service of Tennessee. Dr. W. S. Leathers, State Director of Sanitation in Mississippi, will appear on the program, and it goes without saying that Dr. Leathers will have a practical subject presented in a practical way. He has done a wonderful work in his State, and has done it in a manner that insures lasting benefits. Dr. H. M. Tigert, of Nashville, who has recently organized the Tuberculosis Bureau of the Nashville Department of Health, which is already doing great good for the control of tuberculosis in Nashville and Davidson County, will have a paper on some feature of the tuberculosis situation. Others not members of the association will probably read papers or deliver addresses. The profession of the State will be welcomed at all of the sessions, and it is hoped that many physicians will attend.

VITAL STATISTICS.

The transcribing of vital statistics for the years ending June 30, 1910, and June 30, 1911, has just been completed in the office of the Secretary of the State Board of Health. These statistics, especially the birth records, are, of course, of great value,

but are not what we ought to have. Under the present law vital statistics are collected by the school census enumerators and are not as accurate and reliable as important statistics of this kind should be. This is particularly true of the death records. Some of the causes of death as they are given by the enumerators are more ridiculous than can be well imagined, and in numbers of instances, where the cause of death assigned is more or less intelligently stated, the case must be assigned to the "ill-defined" column. The cost of the collection of vital statistics under the present plan is about what it would be if the uniform law were in force. Every physician in Tennessee should use his influence to secure the passage of the uniform vital statistics law by the next Legislature, and after it has been passed they should help in every way to make its operation and enforcement easy and beneficial to the State. Until we can get a better system, help all you can with the one we have.

PURE MILK.

That infant mortality can be materially reduced by furnishing pure milk, has been amply proven by many cities in this country and Europe. The public demands that the frightful epidemics of typhoid from milk infection shall cease and look to the profession to lead them in the right direction. Why are our professional brothers so delinquent in matters pertaining to public health? Is personal practice and its care so irksome that they have no heart for matters of public interest, or is the lethargy which is affecting our public health officers affecting the entire profession? Last May we called attention to a Milk Commission appointed by the President of the Davidson County Society, which commission promised some startling surprises to Nashville by furnishing pure milk. Have they lost the enthusiasm with which they began this very excellent work or do they propose to make good their promise? If so, we urge that plans may be formulated before the hot summer months and polluted milk begin to

cut down and harvest the innocent babies who are sure to be infected.

UNJUSTIFIABLE CONDUCT.

The County Health Officer of one of the best counties in Tennessee, whose professional men rank well up with the best, came into the office of the State Board of Health recently and explained his failure to report communicable disease on the ground that the doctors of his county failed to report a single case to him. In explanation of their failure, he said that he was not very popular with the profession of the county. Is this becoming? It certainly does not seem justifiable conduct on the part of members of a profession as unselfish as ours should be. Just at this time, when we need all the "ammunition" we can get to shoot at the "American League for Medical Freedom" and other enemies of medicine in general, and State medicine in particular, it does seem that the physicians of the State would do their utmost to help bring about the improvement of our public health service in all of its branches. Have we forgotten the scenes and the sentiment of the last meeting of our State Medical Association?

DEATHS.

Dr. J. R. Jump, of Lenoir City, died February 23. He was a prominent physician of that place, and is survived by his wife.

Dr. T. W. Cash, aged 70 years, died at his home near Pinewood, Tenn., February 20. He was a prominent physician of that place for many years. He is survived by his wife and five children.

Mrs. Inez Marable, wife of Dr. Samuel Marable, a prominent physician residing near Marable's Crossing, Montgomery County, died suddenly at her home February 26 after a short illness. She is survived by her husband and one son.

Dr. J. C. Eaves died February 27 at the home of his daughter, Mrs. Wiley Gold-

stein, of Quebeck, Tenn., after a prolonged illness. He is survived by one son and three daughters.

Dr. J. B. Hanna, of Bethpage, died February 24 from the effects of paralysis, from which he had suffered for more than two years.

NEWS NOTES AND COMMENT

Dr. W. H. Baskette, formerly of Nashville, is reported very seriously ill at his home in Boston, Williamson County.

Dr. E. L. Morris of Moscow, Tenn., was seriously injured in a wreck on the Southern Railway near Somerville, February 22.

Dr. Harvey W. Wiley will address the Conference of County, City and State Health Officers, which meets in Nashville, April 2, 3 and 4.

Drs. E. L. Roberts and John W. Moore of Nashville were appointed by the Nashville Board of Education as medical inspectors for the public schools of this city.

Dr. A. M. Gamble, of Maryville, Tenn., was appointed by Gov. Hooper to succeed Dr. J. R. Rathmell of Chattanooga, as a member of the State Board of Health.

Dr. E. C. Mason of Ravenscroft is doing post-graduate work at Vanderbilt University, Nashville.

The Davidson County Board of Health are planning a barbecue for the delegates to the Health Conference, which will be given at the Davidson County Tuberculosis Hospital, on the Buena Vista pike, affording the delegates an opportunity to inspect this institution.

C. H. Pierce, a medicine peddler, was arrested Monday, February 19, on a charge of peddling medicine in Nashville without a license, and was dismissed, but later arrest-

ed on a charge of violating the pure food and drugs law, but was discharged on a promise to leave Nashville permanently.

A very attractive social and scientific program has been arranged for the State Health Conference, which meets in the Senate Chamber in Nashville, April 2, 3 and 4. Gov. Hooper will welcome them, and the following partial program has been arranged:

Prof. Wickliffe Rose, Executive Secretary of the Rockefeller Sanitary Commission: Subject, "What the County Health Officer Can Do for His County."

Dr. W. S. Leathers of the University of Mississippi: Subject, "Rural Sanitation."

Symposium on Typhoid Fever, by Drs. S. S. Lumsden and A. M. Gable of Washington, D. C., Drs. William Litterer, R. E. Fort of Nashville and Louis Leroy of Memphis.

C. P. J. Mooney, Editor: Subject, "The Relation of the Press to Public Health."

S. A. Mynders, former Superintendent of Public Instruction: Subject, "Medical Inspection of Schools."

Dr. J. R. Rathmell of Chattanooga tendered his resignation to Gov. Hooper recently, as a member of the State Board of Health. Dr. Rathmell states that such action became necessary because he could not spare the time required from his private practice.

We are informed that the Committee on Arrangements are making every effort to give the members attending the State Association meeting in Chattanooga, April 9, 10 and 11, the greatest diversity of social entertainment ever tendered the State Society.

Commissioner Peck and State Live Stock Inspector Dr. Geo. W. White are also on the program.

The Scientific Program, published elsewhere in this issue, when completed, promises to be the most attractive and interesting one ever arranged for the State meeting.

The social features promise to be especially entertaining. The historic and civic

beauty of Chattanooga are so well known that comment is unnecessary. Make your arrangements to attend.

All expecting to attend the Chattanooga meeting should make hotel reservations at an early date. This promises to be the best meeting in the history of the Association.

The *Interstate Medical Journal*, of St. Louis, Mo., announce for their March issue an especially attractive symposium on "Diseases of the Digestive Tract."

The following attractive original articles will appear in this number: "Points in the Diagnosis and Non-Surgical Treatment of Duodenal Ulcer," George Herschell, M.D., London; "Proctoscopy and Sigmoidoscopy," Prof. H. Strauss, Berlin; "The X-Ray in the Diagnosis of Gastro-Intestinal Diseases," Ludwig Kast, M.D., New York; "Diagnostic Value of the Test for Occult Blood in the Stomach Contents and Feces," H. W. Soper, M.D., St. Louis; "The Diagnosis of Cancer of the Stomach," J. W. Weinstein, M.D., New York; "Splanchnoptosis: Enteroptosis," John C. Hemmeter, M.D., Baltimore; "Some General Remarks on the Treatment of Gastric Diseases," Jacob Kaufmann, M.D., New York; "Intestinal Parasites," C. C. Bass, M.D., New Orleans; "Duodenal Alimentation," Wm. Gerry Morgan, M.D., Washington.

We are pleased to note the reappointment of Dr. Lucius P. Brown to the position of Pure Food and Drugs Inspector by Gov. Hooper. Dr. Brown has faithfully and fearlessly fulfilled the duties of his office, and we are especially glad to chronicle his reappointment.

Dr. W. D. Haggard, accompanied by Dr. Charles Mayo of Rochester, Minn., left February 29 for Clearwater, Fla., where they will be joined by Mrs. Haggard, who will accompany them to Cuba for a stay of several weeks.

Dr. R. E. Fort of Nashville was elected President of the State Board of Health, Dr.

A. M. Gamble of Maryville, Vice-President, and Dr. R. Q. Lillard of Lebanon, Secretary and Executive Officer of the Board. Dr. Fort succeeds Dr. T. E. Abernathy, of Chattanooga. Dr. Gamble succeeds Dr. Louis Leroy of Memphis, and Dr. Lillard succeeds Dr. J. A. Albright.

The Nashville Anti-Tuberculosis League will meet in annual session on the evening of March 14, in the auditorium of the Centennial Club, with Dr. Hoyt E. Dearholt of Milwaukee, who is the Executive Secretary of the Wisconsin Anti-Tuberculosis League, and one of the leading workers of the country in the fight against this disease, as the principal speaker.

Dr. Jabez N. Jackson, of Kansas City, Mo., addressed the Nashville Academy of Medicine at its regular meeting, Tuesday, March 5. Subject: "Membranous Pericollitis." The subject was capably handled by Dr. Jackson, and the academy profited much from his address.

MARRIED.

Dr. H. A. Laws, Jr., of Lynchburg, and Miss Cora Faulkinberry, of Blanche, Tenn., were married in Fayetteville, January 11, 1912.

SOCIETY PROCEEDINGS

LINCOLN COUNTY.

The regular monthly meeting of the Lincoln County Medical Society was held at Fayetteville in Dr. J. M. Anderson's office on the morning of February 29.

The society was called to order by the President, Dr. J. T. Graham. The minutes of the last meeting were read and approved.

The following members were present:

Dr. Farrar, Noblett, McWilliams, Goodrich, Blair, Anderson, Cannon, Holland, Graham, McClain, Forbes, Gilliam, Bryant and Patrick.

Dr. J. M. Cullum reported a case to the society which was very interesting and freely discussed.

Drs. Farrar, Cannon, Blair and Gilliam also reported interesting cases.

Dr. J. M. Cullum read a most interesting paper on "Smallpox." The subject was well discussed by all members present, Dr. Cullum closing the discussion.

No further business coming before the society it adjourned to meet the last Thursday in March.

The following is the program for the rest of the year:

—March—"La Grippe," Drs. Anderson and Bryant.

April—"Uterine Displacement," Doctor Yearwood; "Endometritis," Dr. Holland.

May—"Heart Stimulants," Dr. Patrick; "Heart Depressants," Dr. Cannon.

June—"Diarrhoeal Trouble in Children, Acute Indigestion and Acute Gastro-Enteri-Infection," by Dr. Blair; "Acute Ilio-Colitis," by Dr. Gilliam.

July—"Typhoid Fever: Etiology, Pathology and Symptomatology," by Dr. Goodrich; "Differential Diagnosis and Treatment," by Dr. Joplin.

August—"Anterior Poliomyelitis," by Dr. Farrar; "Spinal Meningitis," by Dr. Forbes.

September—"Malarial Typical," by Dr. Graham; "Malarial Atypical," by Dr. Cannon.

October—"Acute Rheumatism," by Dr. Shelton; "Neuritis," by Dr. Sloan.

November—"Symptomatology, Differential Diagnosis of Tonsilitis," by Dr. Laws.

"Operative Treatment of Tonsilitis and Adenoids," by Dr. McWilliams.

December—"Serum," general discussion led by Drs. McRady and Wyatt; report of cases; election of officers.

The society meets the last Thursday in every month.

THOS. A. PATRICK, M.D., *Secretary*.

BEDFORD COUNTY.

The Bedford County Medical Society held its regular monthly meeting February 15. Dr. S. S. Moody presented a paper on "Vaccination for Prevention of Smallpox," which was a very interesting paper and discussed by all members present.

The matter of taking an eclectic physician into our Society was again taken up and discussed and passed over for further action at some subsequent regular meeting.

F. B. REAGOR, M.D., *Secretary*.

HICKMAN COUNTY.

The Hickman County Medical Society met at the City Hall, in the town of Centreville, Tenn., on February 6, for the purpose of electing officers for the ensuing year. The following officers were elected:

President, Dr. John S. Beasley, Centreville.

Vice-President, Dr. J. W. Thompson, Centreville.

Secretary-Treasurer, Dr. W. K. Edwards, Centreville.

Delegate, Dr. R. P. Beasley, Centreville.

Alternate, Dr. K. I. Sutton, Centreville.

The meeting was well attended and this promises to be the best year in the history of this organization.

W. K. EDWARDS, M.D., *Secretary*.

NOTICE, COUNTY SECRETARIES.

At the last meeting of the State Association, held in Nashville, Dr. George E. Petty, of Memphis, introduced a resolution making the following changes in the constitution:

Article VIII—Strike out of Sections 1, 2 and 3 all reference to Trustees of the Journal and rewrite Article to read as follows:

OFFICERS.

Section 1. The officers of this Association shall be a President, three Vice-Presidents, a Secretary, a Treasurer and ten Councilors, one of the Councilors shall be from each Congressional District of the State.

Sec. 2. All the officers shall be elected annually, except Councilors.

The term of office shall be two years. At each annual session five Councilors shall be elected to serve for two years.

The President and Secretary shall be members of the Council, ex-officio, and any five Councilors shall constitute a quorum.

Sec. 3. All the officers of this Association shall be elected by the House of Dele-

gates on the morning of the last day of the annual session, but no delegate shall be eligible to office except that of Councilor, and no person shall be elected to any office who is not in attendance at the annual session. No one shall be eligible for President of this Association who has not been a member in good standing for the five years next preceding the election, nor for Vice-President who has not been a member in good standing for the three years next preceding.

ARTICLE IX—BOARD OF TRUSTEES.

Strike out entire Article and renumber other articles, making Articles X, XI, XII, take numbers of IX, X, XI.

BY-LAWS.

CHAPTER VI.—DUTIES OF OFFICERS.

Sec. 3. Strike out in third paragraph the words "as provided for in Chapter IX, as defined and set forth in the duties of the Board of Trustees," and insert in lieu thereof the following: On a written order from the President, countersigned by the Secretary.

Sec. 4. Strike out the words, "He shall be the editor of the Journal of the Association, and he shall discharge such duties as the Trustees shall direct," and insert in lieu thereof: "He shall publish the proceedings of the House of Delegates and of the Scientific Session of this Association, together with such other matter as is pertinent thereto, in the form of a bound volume. He shall publish said bound volume of transactions as soon after the adjournment of each annual session of the Association as is practicable, and shall send a copy, prepaid, to every member of the Association and to each of the public libraries within the State, and shall discharge such other duties as the House of Delegates may direct.

CHAPTER IX.

Section 1. Strike out of first paragraph the following words: "And subscription to the Journal of this Association."

It is the duty of the Secretary to give notice to the Secretaries of the County Med-

ical Societies of this pending amendment to the Constitution in order that action may be taken and delegates properly instructed. Be kind enough to bring this to the attention of your local body.

Respectfully,

PERRY BROMBERG, M.D.,
Secretary.

PRELIMINARY PROGRAM.

"The Sliding Flap Operation for Cataract," by L. Webster Fox, M.D., Philadelphia, Pa.

Paper (subject to be announced later), by J. H. Musser, M.D., Philadelphia, Pa.

Paper (subject to be announced later), by Edward S. Judd, M.D., Rochester, Minn.

"Acute Anterior Poliomyelitis," by James H. Atlee, M.D., Chattanooga.

"Surgery of the Tonsil as Related to Chronic Diseases," by C. B. Wylie, M.D., Chattanooga.

"The Consideration of Some of the Haemolytic Factors in Sub-Tropical Anaemia," by W. Henry Cheney, L.M., M.D., Chattanooga.

"The Traumatic Neuroses, Due to Actual or Alleged Injury, from the Medico-Legal Standpoint," by Raymond Wallace, M.Sc., M.D., Chattanooga.

"The Treatment of Compound Fracture of the Long Bones," by S. R. Miller, M.D., Knoxville.

"Anaphylaxis," by Carroll G. Bull, M.D., Knoxville.

"Rupture of the Gall Bladder, with Report of Cases," by Battle Malone, M.D., Memphis.

"The Tonsils," by C. B. Jones, M.D., Knoxville.

"Intestinal Obstruction," by Richard A. Barr, M.D., Nashville.

"Laewin's Method of Anesthesia," by W. A. Bryan, M.D., Nashville.

"Injection Treatment of Hemorrhoids," by A. B. Cooke, M.D., Nashville.

"Lithopedian; Presentation of Specimen; Report of Operation," by C. P. Fox, M.D., Greeneville.

"The Surgical Treatment of Acute Infec-

tions of the Uterus and Adnexa, with Special Reference to Puerperal Septicemia," by J. A. Crisler, M.D., Memphis.

"The Present Status of Brain Surgery; with Report of Cases," by L. L. Sheddan, M.D., Knoxville.

Paper (title to be announced later), by J. W. Macquillan, M.D., Chattanooga.

"A Report of One Hundred Consecutive Cases of Abdominal Section," by J. Hugh Carter, M.D., Memphis.

"Sacro-Iliac Strain," by A. G. Nichol, M.D., Nashville.

Paper (title to be announced later), by Wm. St. John, M.D., Bristol.

"Post-Operative Uremia," by E. M. Sanders, M.D., Nashville.

"Management of Syphilis," by W. F. Glenn, M.D., Nashville.

"Further Report of an Interesting Case of Katatonia," by J. W. Stevens, M.D., Nashville.

"Duodenal Ulcer," by J. S. Bachman, M.D., Bristol.

"Medical Inertia," by O. Dulaney, M.D., Dyersburg.

"Etiology of Diabetic Glycosuria," by W. K. Vance, M.D., Bristol.

"A Plea for Larger Doses of Antitoxin in Laryngeal Diphtheria," by W. S. Farmer, M.D., Cookeville.

"Diphtheria, With Report of Cases," by O. W. Hill, M.D., Knoxville.

"The Surgical Management of Exophthalmic Goiter," by W. D. Haggard, M.D., Nashville.

"Treatment of Earache," by Walter Dotson, M.D., Gallatin.

Paper (title to be announced later), by M. M. Hannum, M.D., Maryville.

"The Treatment of Peritoneal Infections," by W. M. McCabe, M.D., Nashville.

RAILROAD RATES FOR CHATTANOOGA MEETING, APRIL

9, 10 AND 11.

The following information is issued by the Southeastern Passenger Association for the benefit of those desiring to attend the Chattanooga meeting, April 9, 10 and 11.

The following instructions are published for your benefit, and if you will secure a certificate when you purchase your ticket you will save two-thirds of your return fare. In order to secure this rate, it is necessary to have 200 certificates. Be sure to ask for certificate when you purchase ticket to Chattanooga:

All delegates or members holding standard form certificate-receipts secured from and executed by agents at starting points, evidencing payment of tariff rate to place of meeting, will be sold tickets for return trip, under the following rules, at one-half of the first-class fare in effect from place of meeting to original starting points, plus 50 cents, via routes traveled on going trip as specified on certificate-receipts. (When routing is via a steamship line, the steamship arbitrary will be added.)

Going Trip—It is necessary that such persons procure certificate-receipts from agents when going tickets are purchased. If through tickets to place of meeting cannot be procured at starting stations, persons should purchase to most convenient stations at which such through tickets can be obtained and there re-purchase through to place of meeting, procuring certificate-receipt from each agent from whom a ticket is purchased, and presenting all certificate-receipts to special agent at place of meeting. No refund of fare will be made because of failure to procure certificate-receipts.

Return Trip (a) Validation for Return—Certificate-receipts will not be honored for return tickets unless signed with ink by authorized officer of our meeting and by special agent appointed by carriers, who will sign certificate-receipts only when satisfied that two hundred (200) or more delegates or members holding properly executed certificate-receipts have attended meeting. You therefore see how important it is to procure certificate-receipts when purchasing going tickets.

Time Limits—No certificate-receipts procured more than three (3) days (not counting Sundays) prior to or more than two

(2) days after date fixed for the commencement of meeting will be honored.

Certificate-receipt must be presented to ticket agent during time meeting is in session or within three (3) days (not counting Sunday) after date fixed for adjournment of meeting.

Not Transferable—Neither certificate-receipts nor tickets issued in exchange therefor are transferable, and if presented by any other person than original purchasers they will not be honored, but will be forfeited.

Tickets for return trips issued in exchange for certificate-receipts will be limited to continuous passage by first train or steamer leaving place of meeting after purchase.

Certificate-receipts must be presented to ticket agents a sufficient time in advance of departure of trains or steamers to permit agents to properly issue tickets and check baggage. They will not be honored by conductors or pursers.

Return tickets at reduced rates will be sold only to stations within territory described by carriers in their tariffs announcing arrangements for this meeting.

No certificate-receipt evidencing payment of less than 75 cents for going ticket will be honored for reduced fare returning.

No certificate-receipt issued in connection with children's half-fare ticket, mileage, clergy, charity or employe's ticket, or any other form of transportation at less than the full regular first-class fare, will be honored for reduced fare returning.

Be sure to secure certificate-receipt from ticket agent when purchasing your ticket to place of meeting.

BOOKS REVIEWED.

MANUAL OF THE DISEASES OF THE EYE. By Chas. H. May, M.D., Published by Wm. Wood & Co., New York City.

This is the seventh edition, revised, of this valuable work from the pen of Doctor May. It follows in general the lines of the former editions. It is a clear, concise presentation of the generally accepted facts regarding the more prevalent diseases of the eye. Theoretical discussions are in the main avoided, but the more generally accepted remedies and the various

operative procedures are well set forth. The book is written in a clear and entertaining style, and is profusely illustrated, containing a large number of colored plates, well executed. This is a book especially suited to undergraduate students and to busy general practitioners, and the ophthalmic surgeon will find in it much to entertain and instruct him.

HILLIARD WOOD.

OPHTHALMIC MYOLOGY. By G. C. Savage, M. D., Published by The Author, 137 Eighth Avenue, North, Nashville, Tenn.

This is the second edition of this work from the pen of Doctor Savage. It is written along the lines of the first edition, but is somewhat larger and more explicit.

In the first chapter the Doctor renews his controversy with the formerly accepted theory of Helmholtz regarding the location of the ocular axis, the secondary visual lines and the planes of rotation. The authority of Helmholtz was so great that anything he taught, whether true or untrue, was almost universally accepted, and even up to this day is scarcely denied. His chapter, however, on axes of the eye and ocular rotations has never been satisfactory to me. Years ago Doctor Savage, whose originality and whose enthusiasm in the study of ocular muscles is well known, dissented from the theory of Helmholtz and has himself worked out a theory which in all fairness I think he has demonstrated to be true, and I think it is certainly far more satisfactory than the more complex theory of Helmholtz. In this brief review it is, of course, impossible to go into a detailed statement but frankly, it seems to me that Dr. Savage's theory is correct, and I think he has demonstrated it to be correct, especially that the macula is always the posterior pole of the eye. Dr. Savage has often written and spoken on this subject, but the present volume seems to sum up the whole argument. I believe the day will come, and is coming, when the theory of Dr. Savage with regard to the ocular axis and planes of rotation will be generally accepted.

The various forms of muscular errors are elaborately discussed in the succeeding chapters of the work, the well-known views of Dr. Savage being stated clearly and fully. The work is of necessity purely technical, and while it would probably fail to interest the general practitioner, it could not fail to impress the ophthalmic surgeon with the careful research into muscular abnormalities which Dr. Savage has made.

The work is written in a clear, explicit style; is well illustrated, and is a full and frank discussion of the matter in hand, bringing the subject of ocular rotations entirely up to date. The originality of the book must appeal to the reader, for unlike so many of our books, it is not a copy of the ideas of any other one. Whether one entirely agrees or not with Dr. Savage, it is but just to admit his painstaking and thorough research, and his originality, which is manifest throughout the entire work. This is easily the most

thorough and comprehensive work upon ocular rotations which has come to my notice

HILLIARD WOOD.

The Practical Medicine Series, comprising ten volumes on *THE YEAR'S PROGRESS IN MEDICINE AND SURGERY*, under the general editorial charge of Gustavus P. Head, M.D., Professor of Laryngology and Rhinology, Chicago Post-Graduate Medical School, and Charles L. Mix, A.M., M.D., Professor of Physical Diagnosis in the Northwestern University Medical School. Volume VII, "Pediatrics," edited by I. B. Abt, M.D., and May Michael, M.D., and "Orthopedic Surgery," edited by John Ridlon, A.M., M.D., and Charles A. Parker, M.D., series 1911. Price, \$1.25. The Year Book Publishers, 180 Dearborn Street, Chicago.

The editors of this volume have collected the important advancements in these branches that have appeared in current literature for the year 1911. The volume is well edited and is valuable to the reader. Many interesting and important points are brought out.

A. G. N.

BOOKS RECEIVED.

MICROSCOPY, BACTERIOLOGY AND HUMAN PARASITOLOGY, by P. E. Archinard, A.M., M.D., Bacteriologist, Louisiana State Board of Health and City Board of Health, New Orleans. New (second) edition, thoroughly revised. 12mo, 267 pages, with 100 engravings and 6 plates. Cloth, \$1.00 net. The Medical Epitome

Series. Lea & Febiger, publishers, Philadelphia and New York, 1912.

PHYSIOLOGY, a manual for students and practitioners, by A. E. Guenther, Ph.D., Professor of Physiology in the University of Nebraska, and Theodore C. Guenther, M.D., Attending Physician, Norwegian Hospital, Brooklyn, N. Y. New (second) edition, thoroughly revised. 12mo, 260 pages, illustrated. Cloth, \$1.00 net. The Medical Epitome Series. Lea & Febiger, publishers, Philadelphia and New York, 1912.

THE PHYSIOLOGY OF FAITH AND FEAR, OF THE MIND IN HEALTH AND DISEASE. By William S. Sadler, M.D., Professor of Physiologic Therapeutics, The Post-graduate School of Chicago; Director of the Chicago Institute of Physiologic Therapeutics; Member of the Illinois State Medical Society; The American Medical Association; The American Association for the Advancement of Science, etc. Author of "The Science of Living, or The Art of Keeping Well," "The Cause and Cure of Colds," etc. Illustrated. Price, \$1.50 net. A. C. McClurg & Co., Chicago.

A TREATISE ON TUMORS. For the use of Physicians and Surgeons. By Arthur E. Hertzler, M.D., of Kansas City, Mo., Assistant Professor of Surgery in the University of Kansas. Octavo, 728 pages, with 538 illustrations and 8 plates. Cloth, \$7.00, net; half Persian morocco, gilt top, de luxe, \$9.00, net. Lea & Febiger, Publishers, Philadelphia and New York, 1912.

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PERITONITIS.

(Continued from March Issue.)

BY RICHARD A. BARR, M.D.,

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Diagnosis of Acute Non-Tubercular Peritonitis.

Since peritonitis is a complication, and since its treatment is to a great extent determined by the location and character of primary focus of disease, diagnosis is largely a question of determining the etiology of the process. No other pathology is likely to be confused with peritonitis if the necessity of determining the cause is kept in view. Pneumonia, especially in children, may cause referred pain in the abdomen, and pleuritic involvement may cause muscular rigidity; meningitis may cause vomiting, constipation and tympanitic distension, but a syndrome that would point satisfactorily to any of the various abdominal causes of peritonitis is absent. The rare cases of metastatic peritonitis are most elusive of recognition, because of the absence of an abdominal focus. The presence of peritonitis can seldom be long overlooked, and though the extent, type of exudate and bacterial causes are more difficult to determine, they are chiefly of importance in prognosis.

Let us emphasize once more that *the diagnostic question of difficulty, and it may be said of importance, in peritonitis is the recognition of the primary focus of disease.*

Prognosis of Acute Non-Tubercular Peritonitis.

The same factors that have already been discussed as influencing the course and symptoms of peritonitis will necessarily influence the prognosis. To these may be added one more which is often of prime importance—that is the time at which the operation is done. The extremely fatal nature of streptococcus and colon bacillus infections has already been pointed out, as well as the mildly pathogenic nature of the staphylococcus albus and of the gonococcus. The danger added by the escape of the irritating and infectious contents of the hollow viscera needs no comment.

The mortality of peritonitis is so much involved with that of the cause, focal and bacterial, that it is useless to attempt to figure general percentages.

We are protected in case of peritoneal infection by:

(1) Bacterial action of the peritoneal fluid, which may be explosive, or take one or two hours (Buxton and Torrey)

(2) Phagocytosis in the cavity, on the peritoneum and after absorption, apparently not effective against streptococci (Murphy), in the organs, the mediastinal lymph nodes being the most active site in the tissues.

(3) Production of plastic exudate and localization of infective process.

Treatment of Acute Non-Tubercular Peritonitis.

Peritonitis is ordinarily preventable by the proper handling of conditions likely to lead to its development. Once established, its treatment is inseparably bound up with that of the primary focus in the majority of instances, metastatic infections and some of those originating from the female genitals being the more important exceptions. The desirability of removal or sequestration of the primary focus, when it lies within the abdomen, is questioned by none though there may be some difference of opinion at times as to the possibility of doing this without causing more harm than benefit. In judging the value of any plan of treatment we must keep this question of the primary focus constantly in mind.

Medical Treatment—There has been used in the recent past several plans of medical treatment—now fallen into disuse to a great extent except for post-operative purposes.

The *Alonso Clark* plan was based on the assumption of an idiopathic peritonitis coupled with the belief that opium was a specific for it. Enormous doses of opium were given. One patient took one thousand grains of opium in one week and recovered, which shows that peritonitis at least establishes a marked tolerance for this drug. At present the use of opium in any form or dosage is strenuously opposed by many, and is confined by all to relief of pain and nervousness and to checking peristalsis. It acts at the same time as a mild stimulant and makes possible increased respiratory movement. Opium is said by Dudgeon and Sargent to check phagocytosis and to this extent is contraindicated.

The *Tait* method consists in giving small doses of saline purges at short intervals in order to eliminate infection through the bowel. If successful in getting free watery movements we do by this method deplete the bowel, and eliminate more or less infection. After operation and possibly in metastatic peritonitis its theoretical value can be seen, and it is still used by many in such conditions.

Gonorrheal infections form the only class of cases with intra-abdominal primary

focus of infection in which the *Tait* method seems rational. In *gonorrheal peritonitis* we have a self-limited process, and for that reason surgery of the primary focus is not indicated in the acute stage. Since there is little or no danger of injury to the primary focus or of spreading infections by peristaltic movement, and since both the primary focus and the bowel are probably benefited by depletion, and the patient made more comfortable by getting rid of gas, purgation is at least permissible.

The *Ochsner* plan includes withdrawal of all food, water or medicine given by the stomach, gastric lavage, low enemata to empty colon, proctoclysis and rectal feeding. It aids nature in an effort at localization. In metastatic peritonitis, in gonorrheal peritonitis, in peritonitis of puerperal origin, and after abdominal operations, it has advantages that cause many to prefer it to the *Tait* method. In other types of peritonitis, when the patient refuses operative treatment, it is theoretically and practically the best. When the patient's condition is too desperate to justify any effort to dispose surgically of the primary focus the *Ochsner* method alone offers any hope. By adding morphine and leaving off the nutrient enemata an improvement is made in this plan of treatment. The local use of ice bags, hot water bottles, turpentine sprays, hot douches, etc., as an adjunct to either *Tait's* or *Ochsner's* plan of treatment will help relieve discomfort and at times has a curative value.

The Surgical Treatment of Acute Non-Tubercular Peritonitis.

It is essential to keep from confusing the surgical treatment of peritonitis with the surgical treatment of conditions likely to be or already complicated by peritonitis. The prevention of peritonitis by the surgical elimination of threatening conditions is ideal. The advisability of attempting to cut off the source of an established infection will depend upon circumstances. If the character and location of the primary trouble can be determined, and there is reasonable hope of being able to take care of

it rapidly and without manipulation of the inflamed peritoneum, it can now hardly be questioned that this should be done, if the patient's condition is not hopeless. It is a difficult task to settle this question of hopelessness and to determine when the shock of the surgery necessary for disposal of the primary focus will be sufficient to insure the death of the patient. Mistakes will necessarily be made, but the advantage of cutting off the source of infection has been proven of such value that we must take desperate risks. When prolonged operation involving manipulation of extensive areas of peritoneum (gun shot or stab wounds of small intestine area, for instance) would be required, it is the part of wisdom to refuse to operate in the face of frank peritonitis. If streptococcic infection is necessarily fatal any surgery in its presence is contraindicated, but unfortunately the bacterial agent cannot be definitely determined before operation. In acute peritonitis of puerperal origin surgery of the primary focus is of questionable propriety.

In treatment of the peritoneum itself, *lavage* to remove septic material; *drainage* to relieve pus tension; intraperitoneal injections of *oils*, etc., to check absorption; intraperitoneal injection of *horse serum*, nucleic acid, etc., to aid leucocytosis; enterotomy to empty the bowel of poisonous fluids and gases come up for consideration.

Lavage was first exploited by John G. Clark of Philadelphia. His plan was to wash out all exudate (thinking in this way to get rid of most of the infection), fill the belly full of saline solution to dilute what infection was left, and then lower the head of the patient's bed to hasten absorption. Since the exudate is often comparatively free of bacteria while they are numerous on the peritoneum the next step was to scrub the peritoneal surfaces. Gauze was sometimes used for this purpose, and all flakes of lymph that could serve as hiding places for bacteria were removed. The folly of traumatizing the peritoneum has long been recognized, but careful irrigation is still carried out by many surgeons. They

do not hope to remove and dilute the infection sufficiently to be willing to try to hasten the absorption of what is left, so the Clark inverted position is no longer used in after treatment. Dudgeon and Sargent have shown that in many instances at least the exudate is a protection to the patient through the leucocytes it contains, and to remove it is to injure the patient's chance of recovery. In addition to this it is a mechanical impossibility to flush clean the cavity of the peritoneum. In attempting to do so we cause traumatism, for the very fluid used probably traumatizes (we know that the contact of blood does so) and the inflamed peritoneum is very resentful of traumatism. Here we seem to have good reasons for not using lavage, as already said, but many European surgeons and a minority in this country still use careful flushing or rinsing, because in parallel series of cases they claim to get better results in those that are rinsed. In streptococcic and pure colon bacillus infection the fluid exudate contains few or no leucocytes, and is a poison pure and simple. In these cases the removal of the exudate, if it could be done thoroughly and without traumatism, would be of some advantage. Since this is impossible, and since even if it were we would leave behind the majority portion of the infection on the surface of the peritoneum and in the sub-peritoneal connective tissue, it is not likely that the extremely high mortality of these conditions could be favorably influenced by flushing. Lavage for removal of food and fecal matter when operation is done immediately after perforation is more rational than when done later after the development of peritonitis.

Drainage—By tube or gauge drains or by combination of these it is hoped to relieve pus tension. When the pus is *localized* by adhesions drainage is not only advantageous but essential. There is little chance of termination of the infection by absorption of exudate. In such cases since the lymphatics are plugged, so to speak, and the peritoneum locally has been changed, and is practically a pyogenic mem-

brane, again where necrotic tissue is left behind, where a weak suture line or damaged viscus threatens perforation, or some similar condition is present, drainage for local effect is imperative. The question of the possibility of satisfactorily draining the general cavity of the peritoneum is debatable. It has been proved by Mikulitz to be an impossibility to drain it clear of fluid even in the cadaver. It seems futile to hope to lower to any marked degree the general intra-abdominal tension by drainage tubes put through the belly wall. The pressure in peritonitis comes from gas within the bowel, and can only be relieved by emptying the coils or giving them more room. Whatever value the drain possesses for relieving the general pus tension is promptly lost through the formation of adhesions around it. These adhesions form in six hours in reaction patients (Zates.) If we accept Dudgeon and Sargent's estimate of the defensive value of many exudates we are forced to the conclusion that in these, at least, drains will do harm to whatever extent they act as such for the general cavity. When the infection is too virulent for adhesions to form, drains as well as other measures are probably futile. Drains put in the cavity predispose to intestinal obstruction. No drain should ever be put in a wound made for purpose of operation if it is possible to avoid doing so, for it predisposes to wound infection. Drains should, when possible, be brought out of separate stab incisions. This holds good for drains of the operating wound itself.

Oils to check absorption. Olive oil and Lanolin have been proved by experiment to check absorption by plugging the lymph channels. Camphorated oil 10 per cent has been used to a considerable extent in prophylaxis, and its protective value is undoubted. When used in established peritonitis it is necessarily less efficient, and has yet to prove its real worth.

Nuclein (5 per cent solution) when injected into the peritoneal cavity some hours in advance of infection, has been proved ex-

perimentally to be protective. Its action may be due to the production of a leucocytosis, or to irritative coffer-damming of lymphatics (Murphy) or to both. Its practical value in established peritonitis is like that of horse serum, normal salt solution and other substances recommended for producing leucocytosis, questionable.

Enterotomy with immediate evacuation of intestinal contents requires too much manipulation of the bowel to be admissible when peritonitis is present. Enterostomy done at some point rather low on the ileum would greatly hasten evacuation of small intestines and help prevent such absorption of poison as takes place from its mucous membrane. This procedure might save an occasional life, but is so unesthetic that it is not likely to get a fair trial.

Nitrous oxide gas, followed by some ether if needed, is the correct anesthetic.

Gastric lavage should be done before the anesthetic is commenced.

The abdomen should be prepared by a dry shave and the application of tincture of iodine.

Post-Operative Treatment.

The Fowler position (semi-sitting) is much used after operation in connection with pelvic drainage to favor the evacuation of pus and to oppose the influence of gravity to absorption. It necessarily throws some strain upon the heart, and is not justified at all unless in conjunction with drainage.

Stimulation is best gotten through the use of normal salt solution. This should be given in most cases by Murphy's method of proctoclysis, supplemented by hypodermoclysis or intravenous infusion if necessary. For proctoclysis a fountain syringe with three-eighths-inch tubing and a hard rubber vaginal douche nozzle is used. No constriction is put on the tube, but the syringe is only elevated six to fourteen inches above the patient's buttocks, so there is no opportunity for more than very slight hydrostatic pressure in the rectum or colon. The fluid can pass readily back into the syringe with slight expulsive effort. Occasionally a patient will retain more satisfactorily

small clysters (half a pint or so), given at short intervals. From one to two pints every two hours is considered a satisfactory amount of salt solution for the patient to retain. In addition to its stimulating effect proctoclysis relieves thirst and encourages renal activity.

The stomach should be kept free of accumulation by lavage, and neither food or water should be given by the stomach until toxic symptoms have subsided. Vomiting may be absent with large accumulations of poisonous fluid in the stomach. In case of doubt as to the presence of this fluid in the stomach, use lavage, as it is of great importance for the comfort and safety of the patient.

By operation the principal contraindication to the use of purgatives is removed, and if the bowels can be gotten open much infectious material will be evacuated. Peristalsis also prevents the formation of adhesions and breaks up those already formed. Calomel is the only drug that is likely to be retained on the stomach, though castor oil and epsom salt given through the stomach tube immediately after lavage will sometimes stick. Eserin (grains 1-100 every four hours by hypodermic) and pituitary extract are recommended to stimulate peristalsis in the paralyzed bowel.

Enemata are of great advantage in getting bowel movements when the stomach is too upset for the satisfactory administration of purgatives by that route. The enema should be given slowly with ordinary rectal tip on syringe, and the patient should retain it as long as possible. A mixture of mag. sulph. 2 ounces, glycerine 2 ounces, turpentine 1 drachm beaten up with yellow of an egg with enough water to make one pint usually works well. Tincture asafœtida 2 drachms to one pint of water is also good, as is powdered alum 1 ounce in a pint of water.

Sera and vaccines have both been used, the former on better theoretical basis. Neither have gotten results that are encouraging, probably due to the fact that

they have not been prepared to fit the special infecting agent present.

To recapitulate and to summarize shortly: In America today, while surgeons believe in peritoneal lavage the only surgical measure in common use for the treatment of *peritonitis per se* is drainage. Its value is questionable. If drainage is of real value, it should be instituted in all cases of severe generalized infection, whether anything further is done in a surgical way or not. The institution of drainage is a matter entirely separate from the surgical treatment of the primary focus. As an aid to drainage or for use in undrained cases we have two plans of medical treatment, Tait's and Oschner's, one aiding elimination, the other aiding localization of infection. When danger from the primary focus can be ignored (gonococcic infections and in most cases after operation) elimination seems most rational. When danger from the primary focus cannot be excluded it is safer to work for localization.

The question of cutting off the source of infection is paramount. The desperate condition of the patient and the necessity for prolonged and extensive handling of the peritoneum are the contraindications to surgery for this purpose. There are undoubtedly cases in which it is best to leave the primary focus alone, but the selection of these cases is one of the most difficult decisions a surgeon is called on to make, and with such light as we have at present it is probably best to run the risk of erring on the side of operation.

APPENDICITIS, ITS TOPOGRAPHICAL VARIATIONS AND TREATMENT.*

BY J. B. HASKINS, M.D.,
CHATTANOOGA, TENN.

It is not my purpose in the scope of this paper to present anything new in either etiology, pathology, diagnosis, prognosis, surgical technique, or medicinal treatment, unless it be perchance under topographical

*Read before the Chattanooga Academy of Medicine and Hamilton County Medical Society, Feb. 2, 1912.

variations, but it is my earnest desire to impress upon you to always be on the alert for appendicitis when pain in the belly is complained of, and to give your patient as good treatment, either medicinal or surgical, as possible.

Appendicitis as an entity and as a precursor of peritonitis in many instances was suspected as far back as 1750. However, it remained to the great and renowned Dr. Reginald Fitz, of Boston, in 1886, to persuade the medical world that the appendix is the real seat of most inflammations in the right iliac fossa.

ANATOMY.

We can truthfully maintain that the appendix, which is a relic of what was probably a large cecal pouch, is a cecum of the cecum. Its point of origin is constant and may be found about one inch from the ileocecal orifice. Wherever the ileum enters the cecum, just one inch from that point will be found the origin of the appendix. To all intents and purposes the appendix and the cecum have a common vascular supply. In women there is sometimes an additional supply by a vessel running in the appendiculo ovarian ligament. They are affected by the same nerves distributed from the superior mesenteric plexus.

The structure of the appendix is similar to that of the colon except that the muscular coat is ill-developed and trivial in amount. It varies in length, the shortest on record three-fourths of an inch, the longest thirteen inches. Its diameter is, as a rule, about equal to that of a No. 9 English bougie. Its canal is narrow and is partly closed by the valve of Garlach. Its location depends greatly upon the length of the appendix *per se* and upon the length of the meso appendix.

The physiologists of today have fully decided that the appendix has no function, saying that it merely represents an organ in retrogression.

ETIOLOGY.

Sundry theories have been advanced as to the cause of appendicitis, a few of which I shall make mention.

1. Heredity, which has been considered by many eminent authorities as a predisposing factor in appendicitis and is spoken of as appendicular diathesis. In my limited experience I have observed enough to be a believer in appendicular diathesis, having seen several cases of appendicitis in the same family within a few months of each other.

I have a young doctor friend who successfully operated upon three acute cases of appendicitis in the same family within two weeks.

2. Malformations of the appendix. Especially where the malformation favors the formation of a closed cavity.

3. Intestinal worms have been blamed as producers of appendicitis.

4. Appendicitis has been considered by many to develop from a co-existent enterocolitis.

5. Bacteria have been considered as producers of the disease in from 50 to 75 per cent of all cases, being produced occasionally by pus cocci, but most commonly by the bacterium coli commune.

Van Zwulenburg, in the *Annals of Surgery*, March, 1905, is quoted: "The colon bacilli, which normally inhabit the appendix, are harmless when the appendix is healthy, but become active for harm when the diverticulum is bruised, obstructed, irritated by the presence of uric acid, congested because of chilling of the cutaneous surface of the body or distended by the ingress of colonic fluid."

6. Foreign bodies, such as pins, fishbones, nails, buttons, date stones, cherry stones, different seeds, etc., may enter the appendix and produce an inflammation of that organ, but they do so far less often than is generally supposed.

7. Impaction of fecal concretions, the orifice of appendix partially or completely closed. The circulation greatly impeded, or entirely cut off, the secretions being retained, the coats become congested, the diverticulum enormously enlarges, microbes multiply with great rapidity, producing an inflammation which may go on to ulceration, perforation, gangrene, peritonitis, or

abscess, if not apprehended by the surgeon.

8. Influenza has been blamed as a cause, also measles, angina, etc.

9. In women inflammation of appendix is often secondary to tubo ovarian disease.

10. Prolonged constipation, flatulent indigestion, rapid eating and at irregular hours often precede acute appendicitis.

In my opinion it is more correct to say that the primary cause of appendicitis often escapes our notice.

Dr. Dickinson, of Jersey City, N. J., in the *March Medical Record*, writes "that appendicitis is a misnomer, if we are able to think in true pathology, saying that appendicitis should not be considered a strictly localized condition, but more properly the term ceco-appenditis should be used, as the probability is that all cases of appendicitis originate in a previous cecitis."

Sex.—Appendicitis is about four times as common in males as in females, supposedly due to a better blood supply in the latter. It is more common in summer than in any other season, and in warm countries than in cold or temperate climes. It is rather rare in children under five years of age, and in adults over thirty-five years of age.

Pathology.—Pathology of the different forms of appendicitis represent all the abnormalities that could possibly occur to any organ composed of similar histological elements.

Varieties.—Various varieties of appendicitis have been tabulated by different writers. To the internist or surgeon the variety means little or nothing, as the uppermost thought in his mind is what must be done in this individual case to save the patient from a long and troublesome convalescence and the family the expense of a funeral. However, I will make mention of a few of the more common types.

1. Catarrhal, in which mucosa is slightly inflamed, slight edema and increased secretion. This form gives rise to few symptoms, the patient thinking or speaking of his condition as a mere griping or belly-ache.

2. Diffuse. In this variety the inflam-

mation rapidly extends from the mucosa, through all the coats to the peritoneal, giving rise to true appendicular colic.

3. Gangrenous, which is characterized by necrosis either local or general. The tip is most often involved, though a large portion may be, and in rare instances the entire appendix may slough off from the cecum.

4. Chronic, which usually follows the catarrhal, the organ from the low grade inflammation and the many acute exacerbations gradually but steadily become fibrous, and if not checked by surgical means, rapidly becomes a fibroid appendix.

5. Fulminating, in which type gangrene and perforation develop within a few hours from the initial onset.

Symptoms and Diagnosis.—If the classical type, or text-book type of the disease, presents itself with the following written upon its face, viz: pain in epigastric or umbilical region, which in a few hours localizes at McBurney's point, with continued pain and tenderness in right iliac region, rigidity of right rectus muscle, nausea and vomiting, temperature of from one-half to two degrees F., patient lying on right side in drawn up position, or upon the back with the legs flexed, the merest surgical tyro can easily differentiate and make a proper diagnosis.

Sad it is that we have so few of the classical or text-book types of appendicitis to deal with, but variations from the above which are daily puzzling the minds of our greatest internes and surgical genii of the world. Any variation from the above we are pleased to speak of as topographical variations of which we have many, and a few of which I shall make mention.

The first case to which I wish to call your attention was in a boy seventeen years of age who was taken suddenly about 2 o'clock a.m. with intense pain in epigastric region for which I was called to relieve. The pain gradually extended all over the abdomen, accompanied by nausea and vomiting, tenderness over the entire abdomen below the umbilicus, slight rigidity and temperature. The patient lay on his left side with limbs drawn up, and when asked to lie on his back

for examination would flex the left leg. When examination was over the patient would turn upon left side and flex limbs. At the end of thirty-six hours the pain began to localize at McBurney's point, and at a point on left side about one inch below and to left of umbilicus. The maximum point of pain, tenderness and rigidity was left of the median line. At the expiration of forty-eight hours the abdomen was opened to find an enormously long appendix transversely located, the tip well beyond the median line, the entire organ being inflamed, the tip gangrenous and perforated.

The second class of cases I wish to speak of is where the appendices hang low in the pelvis. Inflammation of the organ in this situation is accompanied by pain of an indefinite character. Nausea, vomiting, frequent and painful urination, rapid pulse and obstinate constipation. It has been my pleasure to see three of these cases, the first went on to abscess that ruptured into the rectum. The second was tided over, a very acute attack being operated on some three weeks later to find adhesions galore, and a long appendix showing marked signs of past offense. The third and last of this series was accompanied by all the signs and symptoms of appendicitis except the characteristic pain and rigidity, with the added symptoms of slight vesical disturbances and absolute constipation, the latter manifesting itself thirty-six to forty-eight hours before the onset of the disease. Intestinal obstruction was strongly suspected, and getting no results from calomel, oil and salts galore, the abdomen was opened in median line, but instead of an obstruction we came face to face with a necrosed appendix.

The third class of cases of which I wish to make mention are long retro-cecal appendices. Inflammation of the organ in this location is often mistaken for duodenitis, gall bladder disease, or some kidney lesion. I very vividly call to mind one case of retro-cecal appendicitis that resembled an attack of gall-stone colic and a diagnosis of gall stones was made. The patient being distinctly jaundiced, operation was postponed until jaundice cleared up, when operation

was performed the ordinary gall bladder incision was made, to find a normal gall bladder but an adherent, chronically inflamed appendix.

There are cases where the appendices are behind and to the outer side of the ascending colon. Have seen two cases where the point of maximum tenderness and rigidity was between the crest of the ilium and short ribs, and operation revealed the appendix in that location.

Lastly, we have cases of appendicitis occurring where there are ptoses of the colon and where the ascending colon is very short.

Chronic appendicitis or fibroid appendix which produces a continual irritation of the nerves in the ceco appendix will lead to a condition known as nervous dyspepsia. These unfortunates complain of discomfort in the epigastrium, sometimes slight nausea, rarely vomiting, gas distention with eructations, a fickle appetite, sometimes disturbances after a careful meal, without any, after a hearty one, sense of distress in the bowels, flatulence, toxemia headaches, mental annoyances and lassitude. Stomach analyses will discover at times an excess of acid, at others a deficiency, but as a rule the enzymes do not change. This perversion of gastric functioning is associated with epigastric pains and tenderness with the tender area in the median line about midway between umbilicus and ensiform. It is estimated by our most exalted authorities that 60 to 75 per cent of the supposed dyspepsias are peripheral in origin and the larger proportion of peripheral conditions inciting pseudo-dyspepsia have their origin in a fibroid appendix or chronic appendicitis.

One word of admonition. When you are in doubt about any intra-abdominal condition, don't arrive at a diagnosis too quickly or haphazardly. Use the best consultants either internist or surgeon, both if necessary. Study the case closely, use all the laboratory methods possible that you think will throw any light on the case, and there is one thing that I deem absolutely necessary, and should be done routinely in dif-

ferentiating any acute intra-abdominal condition, viz: a leucocyte count.

One thing further which is most important of all, don't give an opiate in any form unless you are absolutely forced to, and never a purgative until after a diagnosis is logically and scientifically established.

Treatment.—many and various theories have we in the treatment of appendicitis. The gamut being from Christian Science therapy to the surgical, which, to my mind, is the only logical and scientific method of dealing with such an obdurate organ.

Kocher says: "My experience has led me to recommend operation if the patient has had one definite attack of appendicitis, or repeated attacks, even though the symptoms have been but slight, provided there is sufficient evidence of existence of changes in the appendix. It is estimated by different authorities that appendicitis will recur in from 75 to 90 per cent of all cases."

Murphy says that any case of appendicitis that is allowed to go on involving peri-appendicular tissues has thus far been maltreated.

Having decided that every case of acute or chronic appendicitis should be operated upon, the surgeon, in doing an appendectomy should pursue his work with the utmost care, with good judgment and with the latest methods of technique, and up-to-date knowledge of the pathology of the disease, of the powers of recuperation of this part of the body, and of the physiological and constitutional reparative ability of the human body in general, and of the special patient under consideration in particular. The operation should be done rapidly, carefully, and with the latest and best methods. Personal equation counts for much in any operation involving the opening of the abdominal cavity.

When to Operate.—This has been a much debated subject, and is still a mooted one, having adherents of international reputation on both sides. Some saying operate at any time, others at selected periods, the latter claiming a less mortality rate. Having been taught and having served a two years' apprenticeship under a surgeon who, when

he can, operates at selected periods of the disease, the writer naturally is a student of the old school.

In acute appendicitis operate within the first thirty-six to forty-eight hours. If for any reason you can't operate within the first thirty-six to forty-eight hours, unless your patient is rapidly growing worse, tide him over and operate in the interval, when the mortality should not exceed one-fourth of 1 per cent. If you have a very sick patient, one in whom you have good reason to believe the pathology is no longer confined to the appendix, but your patient gradually getting better, wait—give nature an opportunity to wall off the offending pathology, giving you an appendicular abscess, and if adherent to the anterior parietes it is then an easy job to prod through parietes, evacuate pus and cure your patient some ten to fifteen days later.

The operation which I will describe is one applicable to cases where the pathology has never extended beyond the appendix and appendix normally situated. It is known as the criss cross operation, which consists of a 3-inch incision over McBurney's point, through skin, superficial fascie, and through aponeurosis of external oblique, a separation, not an incision, of the fibres of internal oblique and transversalis then opening the peritoneum. Deliver the cecum and appendix, ligate the meso appendix, leaving ligatures long, incise meso appendix from appendix, with an ordinary artery forcep clamp off appendix just above clamp. Pack around with gauze and sever between the two forceps. Tie off the stump of appendix with No. 3 catgut, touch with carbolic acid followed with alcohol, run a purse string suture of linen around base of appendix, invert stump of appendix, draw up purse-string suture, tie and lastly tie to long sutures of meso appendix, using it as a buttress. Sew up peritoneum with No. 1 catgut doubled. The muscle fibres may be drawn together by one or two sutures, though not absolutely necessary; the aponeurosis of external oblique is brought to-

gether with No. 3 catgut. The skin and superficial fascia with most any suture material, but preferably with horse hair.

The incision for topographical variations will depend upon the location of the appendix.

"STAPHYLOCOCCUS INFECTIONS OF THE SKIN."*

E. DUNBAR NEWELL, M.D.,
CHATTANOOGA, TENN.

This is not a subject of my own selection, and I wish in the beginning to apologize to the society for my ignorance on this subject. Your smooth, genial Secretary inveigled me into writing a paper on this subject, but for one night, and one night only, I will do my best to be a skin specialist.

The lesions of the skin that are caused by the staphylococcus infection, or in which they are usually present, are boils, furunculosis, carbuncles, pustular acne, pustular eczema, sycosis and impetigo contagiosa. The skin specialist—not the one-night specialist—may know many other lesions of the skin caused by the staphylococcus organisms, but the above are the only ones that I am familiar with and have treated, and that is the kind that I am going to talk about. The staphylococcus has a special predilection for the skin, penetrating the protecting epithelium, the hair follicles, sometimes through the sebaceous glands or through some abrasion of the skin—the sweat glands are seldom invaded. The diagnosis of staphylococcus infection of the skin is made by clinical symptoms, the microscope and by cultures. In boils, furunculosis, carbuncles, sycoses and impetigo it is practically always the staphylococcus that is the causative agent. In pustular acne we usually have the staphylococcus and the acne bacillus combined. Nodular acne is caused by the acne bacillus and the staphylococcus pyogenes is not usually present. In pustular eczema the staphylococcus is not the causative agent, but a secondary infection. In wound infec-

tions and abrasions of the skin it is sometimes difficult to know whether we have a staphylococcus pyogenes or a staphylococcus pyogenes invasion. A smear examined with the microscope is usually accurate; a culture, of course, far more so; but we have clinical symptoms that in ordinary practice are accurate enough. If the skin wound is infected by staphylococcus alone, the infection is usually circumscribed, is confined to the skin; thick pus is freely formed in the wound; the patient has little or no fever, and general symptoms are good. Streptococcus infection has an affinity for the lymph channels and spaces in which it travels widely and rapidly; there is very little liquefaction of tissue, and we have thin, watery pus.

But by far the most important trail of the streptococcus pyogenes is the acne causing red streaks running from the seat of inflammation through the lymphatics to the nearest lymph nodes. If the infection is caused by the staphylococcus alone, it is usually easily controlled. In streptococcus pyogenes infection we usually have headache, fever and a general feeling of lassitude and illness. Frequently the two are combined, and then we would treat the wound for the streptococcus infection mainly and the staphylococcus secondarily.

We will not consider the differential diagnosis of the other skin lesions by the staphylococcus pyogenes infection, as the diagnosis is usually self-evident. The usual and ordinary treatment of these lesions is well known, and I will not burden the society with something that you all are very familiar with. However, there is a new treatment for all these lesions that, when used in conjunction with the usual treatment, makes their treatment as simple as the treatment of diphtheria with antitoxin. I refer to the method of injecting beneath the skin dead bacteria held in suspension to increase the opsonins of the blood serum and thereby prepare the invading bacteria for easy and quick destruction by the phagocytes. If the elements in the blood serum called opsonins are deficient—this is low resistance to the particular germ in ques-

*Read before the Chattanooga Academy of Medicine, August, 1911.

tion—the phagocytes cannot destroy the invading bacteria, but this deficiency of opsonins can be remedied with respect to a given germ by bringing about an increase in the amount of opsonins in the blood, thus affording in an individual a state of immunity so far as that particular germ is concerned. The injection subcutaneously of killed bacteria in suspension favors phagocytosis, as is indicated in an increase in the number of germs microscopically observed to be enclosed or swallowed by the phagocytes in a given volume of blood of the patient after the vaccine has been administered, and it is especially with the staphylococcus vaccines that the most brilliant results have been observed. The vaccines are prepared in two ways—either made direct from the pus from the patient, autogenous vaccines, or made in the laboratory and sold as stock vaccines. In the treatment of skin affections by the general practitioner the stock vaccines are the only practical ones, the ones ordinarily used, and the ones that I have used in all the cases that I have treated with bacterial vaccines.

As I have before stated, for a bacterin to be of any value it must be of the same species as that causing the infection, and it is, therefore, necessary to make an accurate diagnosis before using the bacterin treatment. This diagnosis may be made by examining the pus or other discharges microscopically, or by preparing cultures from it. In many cases the clinical phenomena make the bacteriological diagnosis almost certain—for instance, boils, carbuncles, pustular acne, pustular eczema, impetigo contagiosa, sycosis—and no other determination is necessary. The opsonic index may be used to determine the responsible organism either by testing the blood against the various suspected organisms and using that bacterin to which the index is lowest, or by injecting bacterins corresponding to the same organism and noting which injection most strongly influences the index. I have used the staphylococcus pyogenes vaccines with marked success in boils, carbuncles, pustular acne and pustular eczema. The following is illustrative:

E. E., white, male, drummer from New York, had had a series of boils on back of neck for many months; was suffering intensely, when I saw him, from three large boils on back of neck. I opened them well under local anaesthesia and cauterized with pure carbolic acid and injected 150,000,000 staphylococcus pyogenes aureus. The first few hours he did not feel much better, but after that he felt fine, slept well the first night, and in the morning, when he came to the office, he said he was ready for work. He got two more injections at 48-hour intervals, and was discharged, cured, after having had these boils for many months. I heard from him several months afterwards and he still had had no return. (Parenthetically, I will say that he paid for neither the treatment nor the vaccines, and I have been sorry ever since that I cured him at all.) Another case with a crop of small boils or abscesses around the rectum and vagina, of long standing, was promptly relieved by bacterial vaccines.

On July 4 I opened freely a large carbuncle of neck under cocaine anaesthesia; used no local applications of any kind, and dressed the wound with dry sterile gauze. Injected 150,000,000 of the staphylococcus pyogenes aureus between the shoulders. On the night of the 6th he returned for treatment and I removed the original dressings. There was very little pus on the gauze. The deep purplish color was gone. Very little tenderness. The core was easily expressed, and the patient voluntarily acknowledged that he had been perfectly comfortable ever since I had first opened the carbuncle. One more injection and he will be discharged.

In boils, carbuncles, impetigo, pustular eczema and local skin infections it is usually the staphylococcus pyogenes aureus that is the infecting organism, but in acne we frequently have the staphylococcus pyogenes aureus, albus and citreus as well as the acne bacillus, so in these cases it is usually necessary to give the acne bacillus vaccine and a polyvalent vaccine of the combined staphylococcus pyogenes aureus, albus and citreus organisms.

The doses and the interval between them vary widely. Some investigators begin with ten to twenty-five millions of bacterins and increase the dose very guardedly so as not to have a too great "negative phase," and they do not repeat the dose until the "positive phase" begins to decline. Other workers begin with as large a dose as 300,000,000 and repeat every forty-eight hours. Personally, I have seen very little of the "negative phase," and I think with the staphylococcus vaccines you have very little of that condition.

Floyd and Worthington, in the Boston Medical and Surgical Journal, state that if the bacterin is not effective it may be on account of the fact that the blood carrying the newly-formed opsonins has not free access to the infected area. The flow of blood may be prevented either by pressure on the vessels, as in the case of an abscess, or by stagnation from chronic inflammation, requiring massage or artificial hyperemia for its relief, or, finally, by increased viscosity of the blood which is commonly found in association with hard, brawny inflammatory swellings. This may be controlled by giving citric acid in teaspoonful doses three times a day.

Ohlmacher, in the Journal of the American Medical Association, reports a series of cases treated by bacterins. Two severe cases of acne vulgaris of one and two years' standing he treated with autogenous bacterins. In one case, after eight injections, the nodules ceased to appear, and the seborrhoea had given place to normal skin. In the other case six injections cured a most repulsive indurated acne of the face. A case of impetigo was also treated with autogenous bacterins. The first injection brought the disease to a standstill and the second effected a cure. In a case of recurrent impetigo of fourteen months' duration two injections cured. A two-year-old girl, in whom boils resulting from mosquito bites had lasted six weeks, was cured by one injection.

Morris W. Richardson, of Boston, in the A. M. A. Journal, says: "Results in staphylococcus infection treated with spe-

cific vaccines have been more encouraging than in any other variety of bacterial invasion. Opinion is practically unanimous that acne, boils, carbuncles, sycosis and furunculosis are very favorably influenced."

Dr. Lee, of Boston, reporting his observations in the Boston Medical and Surgical Journal, believes that the opsonic index is of less value as an indication of the interval between the doses than the clinical symptoms. It may be necessary to inoculate an extremely sick patient every twenty-four hours, while during convalescence every five days is sufficient. It is not enough to know that the infecting organism is a staphylococcus; the variety must be known.

A case is reported of septic inflammation in the finger, due to staphylococcus citreus, in which an aureus bacterin was without benefit, but prompt cure resulted from the use of citreus bacterin.

In a case of cervical abscess, due to staphylococcus albus, inoculation with aureus was without benefit, but after two inoculations with albus the patient was able to return to work. Dr. Lee believes that if we cannot determine the exact species responsible for the infection, the use of vaccines is inadvisable.

TRACHELORRHAPHY.*

BY GEO. R. WEST, M.D.,
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You have, I do not doubt, wondered why I should ask you to listen to a paper on so trite a subject as the operation for laceration of the uterine cervix. It would seem that enough had been said on this subject and that an evening devoted to its consideration would be an evening wasted. I admit the age of the discussion and the amount of material devoted to it in the past and bring it before the Society because I believe its truths are so axiomatic that they have been learned so well and so long ago that they are now being overlooked.

* Read before the Chattanooga Academy of Medicine, February 23, 1912.

We are certainly living in an age of surgery, and the men who do not do surgery are very scarce and, because of the wonderful improvements, it is the big surgery that is attractive. In doing laparotomies, gall-stone operations, etc., surgery of less serious a nature is lost sight of. It is for the reason that I believe there are a long chain of symptoms and many serious conditions directly attributable to the laceration of the neck of the womb that we are to study that subject tonight.

Notwithstanding the fact that nearly all women who give birth to children have some sort of a tear in the womb and that babies have been born since the world began in the same old way, we find very little account taken of this condition until the time of Emmett, about 1865-70. Emmett's first published articles on the subject in 1869 and again in 1874 were so thorough and have been improved upon so slightly that they are the recognized authority until this day. Sims, who immediately preceded Dr. Emmett in the Woman's Hospital in New York, and who was the father of gynecology, spoke often of amputation of the cervix and, in every case of deep laceration requiring operation, he recommended amputation instead of the operation now used for paring the edges and attempting to restore the cervix to its original form. Indeed, at the present time there exists a large number of surgeons who will perform the old operation of amputation in cases of very deep cervical tears. Abroad the operation has never been very enthusiastically taken up. Lawson Tait said that no more useless operation had ever been devised, and in Germany little has been thought of it. However, in America the operation is very popular, and even the opponents of it will admit its usefulness under proper conditions. I would not advocate the repair of all cervical tears indiscriminately. They exist so commonly that all women who bear children would be subjected to operation. We will try to avoid a text-book treatise on the subject, but speak from the standpoint of experience and express personal opinions.

First as to the primary operation or the repair of the tear when it occurs during labor—as we recognize the puerperal tear as the only one under discussion. I do not approve of the attempt to immediately repair the torn cervix except, first, where the hemorrhage is so great in consequence of the tear being so deep that the loss of blood becomes dangerous; or, second, where the tear of the pelvic floor is so great that it requires sewing and it becomes convenient to sew up the torn cervix at the same time. I object to the attempt at immediate repair of the cervical tear because, first, if sewed sufficiently tight proper drainage of the puerperal uterus will be interfered with; second, increased danger of infection from handling the bruised vaginal tract; third, a failure of the edges to unite on account of the flow. As a substitute for the immediate repair some have advocated waiting until the fifth day, that at that time no freshening of the edges will be required except scraping with a curette, that at that time involution has begun and union will be more likely to occur. Others advocate the operation at the end of the two weeks and insist that the repair is easily and surely accomplished by the end of the lying-in period or six weeks after labor. My own opinion is against any attempt at immediate repair. It is a very bad time to talk surgery I have found—quite enough has been experienced. In the discovery of a remaining tear which has not united at the time of the last examination of the patient before she is dismissed, I believe in informing the husband or some one else in authority of the condition and explain to them the necessity of repairing the damage if in the future symptoms should be produced at any time.

I note here a difference of opinion. First we have the obstetrician who advocates the immediate repair; next the one who prefers waiting a few days, that because involution of the cervix has fully set in on the fourth day that at that time it is advisable to make the operation. Again we find a number of our profession who will insist that operation in two or three weeks is the

proper procedure, while I would advise the waiting for symptoms to show the necessity for an operation, and these are frequently deferred for six or eight years. I regret to say that the latter view is not in keeping with the modern commercial view of the practice of our noble art, which seems to be not to do all you can for the good of the patient, but to do all to the patient you can for the good of the doctor.

We need not waste time in talking of the varieties or diagnosis of the tears in the cervix. The symptoms are best studied under the two headings, local and general. The local symptoms are usually the ones which cause the patient to seek medical advice: dull pain in the back, sensation of weight in the pelvis, pain in region of ovaries, leucorrhoea chiefly of the cervico-uterine variety, menorrhagia, dyspareunia, sterility and habitual miscarriage. The careful elucidation of each of these symptoms is unnecessary. They are all familiar to you and are usually referred to by a patient as having female trouble for a long while. General symptoms are anaemia, subinvolution, hystero-neuroses, relaxed ligaments with its displacements and congested ovaries. The evidence that the woman is subject to neuroses by reason of the cicatricial plug in a torn cervix becoming an irritation to the general nervous system is so strong and has so accumulated over years that we can only mention that their existence is a fact and their method of action very mysterious and hard to believe. The appearance of the eroded os of the old deep tear with its diseased mucus glands is familiar to all of you, and while the idea of "ulcers of the womb" which have to be cut out is obsolete, yet we do believe that the ulceration is not only the enlarged os, but the endometritis beyond, and that the irritation at this point may produce carcinoma and does so more often than in any other portion of the body. The fact that carcinoma of the cervix uteri is due alone to puerperal tears I cannot pretend to determine, but I am sure I am justified in saying that my experience and belief point strongly in that direction. The significance

of cervical laceration as a factor of uterine disease is now universally accepted by advanced gynecologists all over the world. There is no question that the importance of the lesion has been greatly exaggerated in the past; so that every laceration, no matter how trivial, was at once suspected of dire consequences and was accused of being the author of all sorts of mysterious symptoms. But now, as one gynecologist puts it, "We have come to the conclusion, as a result of experience and deliberation, that the significance of a cervical rent as a cause of uterine disease lies not in the existence of the rent itself, but solely in the symptoms which it produces, and in the direct influence which can be traced to it as the prime factor in the production or maintenance of some pathological condition or functional derangement in the pelvic organs or elsewhere in the body."

After long experience and close observation I am not inclined to recommend any palliative treatment at all. Applications to the cervix, medicated tampons and douches give but temporary relief and should be resorted to only while some circumstances make the radical cure by operation impossible. I may be severely criticized by thus summarily disposing of medical gynecology, but it is in accord with my experience. Temporary relief is thus gained, but very quickly lost.

The operation is such an old one and such an easy one that I hesitate to go into details of its performance, except that I am convinced that it is not easy to do well. I am convinced that to perform successfully this as well as any other operation in surgery the requisite is to get thoroughly ready to do it. A few days beforehand, with a suppression of diet, and the bowels and bladder empty will make easy sailing later. Thorough douching of the vagina and cleansing of the rectum prior to operation. I say thorough douching; unless your attention has been called to it, you will be surprised to know how very unsatisfactory is the ordinary douche in cleansing the vagina.

The position for the operation: I began operating in the left lateral or Sims

position, and yet that has been so preceded by the lithotomy position that I doubt if many have seen the operation done with the patient on the side. The instruments, too, had to be changed. The Sims duck-bill speculum has long since given way to the self-retaining operating speculum. The scissors replace the knife and the double and single tenaculum. For sutures we have tried everything and look back over the period of silver wire with or without shot, the silk worm gut and down to the chromicized catgut of today, which does not have to be removed, and for this fact the doctor and patient are very grateful. The cervix is cut freely and deeply where formerly we carefully removed the mucus membrane with a knife. I would emphasize what would seem to be a simple fact, and yet, in my mind, is very important. Do not attempt too much traction on the cervix; don't try to pull the cervix to the vulva in order that you can operate with ease. The stretched ligaments will result in a prolapse and the patient's last condition will be worse than her first. The operation of thorough curettement with a dull curette after moderate dilatation of the cervix should always precede trachelorrhaphy.

The contra-indications to an operation on the cervix are existing disease of the tubes especially, or any suppurating pelvic disease which would be relighted by a necessary traumatism of the operation. A few tears may not have to be operated upon; some deep tears may be healed themselves primarily if not infected, but by far the greater majority will finally produce symptoms either local or general, and will, therefore, require operation. It is estimated, however, by Munde that 50 per cent of the lacerations of the cervix during labor either heal of themselves or they cicatrize and do not produce symptoms. The finding of a torn cervix when examining for other disease does not justify the suggestion of an operation, but a patient presenting herself with the classic symptoms of

something wrong in the pelvis, as well as the varied reflex neuroses, is certainly entitled to the certain relief that comes from the proper repair of the long-neglected laceration. While I believe that a lacerated cervix will produce a displacement, both prolapse and retroversion, in various ways, I do not think the repair of the cervix will replace the uterus, but invariably perform some of the various operations best suited to the purpose to relieve that condition at the same time that I operate on the cervix. I do not hesitate to do a curettement, sew up the cervix, repair the perineum, cut off a pile or two, open the abdomen to remove the appendix or do the operation of hysterorrhaphy all at the same time. If all of these are necessary in my judgment to complete a cure, then I believe I should not subject my patient to a second operation and anaesthetic if all can be safely done at once; and after considerable experience I am fully satisfied with this method. The patient wants to get well and is submitting to operation for that purpose, so I feel that the result must justify her.

I want, then, by presenting the subject of trachelorrhaphy to emphasize the importance of not overlooking small things in our work of big surgery. That the torn cervix, with its present and remote symptoms, is a decided factor in all the diseases of women; that the modern surgeon will do this operation as one of the various ones necessary to restore the woman to the enjoyment of perfect health; that in the performance of the operation our methods of operating, and, therefore, the instruments have changed that I would urge against the too strong pulling down of the uterus, as it does not go back in place; that displacements are not cured by this operation, but, when it is improperly done, are caused by it; that catgut, ten-day chromicized, is the ideal suture; that when the perineum requires stitches, I never hesitate to do all at the same sitting, even to the necessary laparotomy for other diseases.

VACCINATION.*

BY S. S. MOODY, M.D.,
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It was the custom in China in the most ancient times to introduce the crusts of smallpox matter into the nose in the process of inoculation, and in India to rub the matter on an abraded skin. The practice of inoculation wholly by the matter of the disease of the skin is of very ancient origin. It was introduced into England from Turkey in 1718 by Lady Montague, the wife of the British Ambassador in that country. The disease contracted in this way would make its appearance in about forty-eight hours after inoculation and run the typical course of variola, but in a mild way, and the time of the disease was usually somewhat shortened. The main drawback to the method was that the disease produced was true smallpox and as such would not only confer immunity, but would render each subject a possible source of infection to all unprotected, virtually creating an artificial epidemic.

As early as 1780 Jenner was a medical apprentice at Sudbury, when he became acquainted with the popular belief in the protective influence of cowpox, a subject which he was unable to dismiss from his mind. He visited Gloucestershire and made observations for himself. He found that there existed a widespread belief among the dairymen that certain individuals who had contracted sores upon their hands from contact with sores upon the bags of cows were never attacked with smallpox. Much contradictory testimony presented itself at first, and many disheartening exceptions were found. On May 14, 1796, he took matter from the hand of a dairymaid, Sarah Nelmes, who had cowpox, and inoculated James Phipps, a healthy boy eight years of age, by means of two superficial incisions. The cowpox ran its ordinary course, and on the first of the following July matter was taken from a smallpox pustule and inserted into the boy,

but no disease followed. A number of children subsequently vaccinated in succession, "one from the other," were, after several months, exposed to the infection of smallpox, some by inoculation, others by variolous effluvia, and some in both ways, but they all resisted it.

There is evidence that Jenner worked with this subject, encountering and overcoming obstacles and opposition on every hand for over twenty years before he announced it to the world, and fully two years elapsed between the first vaccination and the publication of his paper, entitled "Inquiry Into the Causes and Effects of the Variolae Vaccinae, a Disease Discovered in Some of the Western Counties of England, Particularly Gloucestershire, and Known by the Name of Cowpox." Jenner lived to see all opposition overcome, while the procedure was at once adopted all over the world, and to receive universal honors and emoluments as the greatest benefactor of his kind.

In the United States cowpox was introduced by Benjamin Waterhouse, Professor of Physics at Harvard, who, on July 8, 1800, vaccinated seven of his children. In Boston on August 16, 1802, nineteen boys were inoculated with the cowpox. On November 9 twelve of them were inoculated with smallpox. Nothing followed. A control experiment was made by inoculating two unvaccinated boys with the same smallpox virus. Both took the disease. The nineteen children who were inoculated on August 16 were again unsuccessfully inoculated with fresh virus from these two boys. This is one of the most crucial experiments in the history of vaccination, and fully justifies the conclusion of the Massachusetts Board of Health that cowpox is a complete security against the smallpox.

Cowpox.—There is still some difference of opinion as to the exact nature of cowpox, some claiming that it and smallpox are two separate and distinct diseases, others holding that they are the same disease—that cowpox is smallpox modified by passing through the cow. There seems, however, to be more evidence that the latter view is

*Read before Bedford County Medical Society, February 15, 1912.

the correct one. Cowpox is an infectious disease which appears in dairies from time to time, often at wide intervals of both time and space, and shows itself in some particular cow, usually a young cow, a heifer in her first milk. It never appears first in other cattle than milk cows, and never shows itself elsewhere than on the teats or at adjoining parts of the bag, as they may be affected by direct pressure. It appears in the form of scattered papules, which, in the course of a few days, show fluid at their apices, to become transformed into distinct vesicles. These vesicles are broken by the hands of milkers, and the disease is thus disseminated in the course of a few weeks, sometimes months, throughout the entire dairy.

It is a matter of secondary importance, so far as the protective efficiency of the virus is concerned, whether so-called animal or human lymph be employed in vaccinating, for it is the same virus in every case. Animal lymph takes slower and harder, but compensates for these objections by freedom from any possible infection with other diseases, as tuberculosis or syphilis. Such instances are very rare, but the fact that syphilis can undoubtedly be transmitted by vaccination was proven experimentally by Dr. Robert Cory, Chief of the Natural Vaccine Establishment, England. He vaccinated himself four times from syphilitic children, the first three with negative results, but the fourth time he was vaccinated from a child the subject of congenital syphilis. At two of the points of insertion red papules appeared on the twenty-first day; on the thirty-eighth day a syphilitic ulcer was found, and by the fiftieth day the constitutional symptoms were well marked. The difficulty as well as the possibility of transmitting syphilis in this way is proven in this experiment.

If bovine lymph is not available, humanized lymph should be taken on the eighth day, and only from perfectly formed and unbroken vesicles which have had a typical course. Pricking or scratching the surface allows the lymph to exude, and it may be collected on ivory points or in capillary

tubes. The child from which the lymph is taken should be healthy, strong and known to be of good stock, free from tuberculosis or syphilitic taint. The glycerinated calf lymph has now come into general use.

Technique.—That part of the arm about the insertion of the deltoid muscle is usually selected for the operation. The site selected should be thoroughly cleansed, but not with chemical antiseptics, as it is thought these may interfere with the action of the virus. The skin should be put upon the stretch, and with a lancet which has been previously sterilized, or the ivory point, cross scratches are made in one or more places, so light as to expose the superficial lymphatics and draw no blood. The lymph is then applied, and if it has dried on the point it is best to moisten it in warm water, and the virus should be well rubbed into the abraded surface. The clothing should not be adjusted until the spot has dried, which it will usually do in ten to thirty minutes, and it should be protected for a few days, a small piece of sterile gauze, held on with a couple of narrow strips of adhesive, making a very good dressing. It is important that no shield be applied which congests the parts by peripheral pressure or which exerts any suction. Some writers have advocated vaccination by the hypodermic needle, claiming that little or no scar results from this method, but this seems to be a questionable advantage.

Clinical Manifestations.—The true vaccination shows all the characteristics of a single typical smallpox pustule. At first there may be slight irritation at the site of inoculation, which subsides, and on the third or fourth day a papule is seen, surrounded by a reddish zone. This gradually increases and on the fifth or sixth day shows a definite vesicle, the margins of which are raised while the center is depressed. The vesicle is a reticulated sac divided into compartments, the puncture of which, as for the collection of lymph, discharges its fluid contents by slow oozing from the compartment punctured, and it does not collapse as in the vesicle of chicken-

pox. By the eighth day the vesicle has attained its maximum size; it is round and distended, with a limpid fluid, the margin hard and prominent, and the umbilication is more distinct. By the tenth day it is still large, and is surrounded by an extensive areola. It has become opaque and yellow; the serum has changed into pus, forming the pustule. The skin is swollen, indurated and often painful. On the eleventh or twelfth day the hyperaemia diminishes, the lymph becomes more opaque and begins to dry, and by the end of the second week the pustule is converted into a brownish scab, which gradually becomes dry and hard, and at the end of the third week separates and leaves a characteristic scar.

The cicatrix of vaccinia is a more or less circular depression, marked by minute pits and radiating lines, and should measure one-third of an inch in diameter; red or pink at first, its color gradually fades to the bleached appearance of cicatricial tissue, to remain as a mark for life or to gradually disappear in the course of adolescence to the faintest trace. However pronounced a cicatrix, it should be remembered that this is evidence only of destruction of tissue, and not of permanent protection against smallpox.

Constitutional symptoms of a more or less marked degree follow the vaccination. Usually on the third or fourth day the temperature rises, and may persist in increasing until the eighth or ninth day. There is a marked leucocytosis. In children it is common to have with the fever restlessness, particularly at night, and irritability, but, as a rule, these symptoms are trivial. If the inoculation is made on the arm, the axillary glands become large and sore; if on the leg, the inguinal glands. More extensive inflammation, dermatitis or ulceration indicate mixed infection. Delay in the appearance of the vesicle even to the end of a week does not preclude success, provided the subsequent phenomena appear in course.

Prophylactic Value.—Vaccination is so thoroughly established that it needs no argument to prove its value. Through its

agency smallpox becomes one of the most easily controlled of the epidemic diseases. The immunity conferred by it does not, as Jenner hoped, last for life, nor is it claimed to be an invariable preventive of smallpox, but in an immense majority of cases successful inoculation renders a person for many years insusceptible. No definite statement can be made as to the length of time a successful vaccination will confer immunity, this varying so widely in different individuals; in many cases a single typical scar will remain potent for a lifetime, repeated attempts at revaccination proving futile, and the subject remaining immune, though frequently exposed to all forms of the disease. In other cases the immunity may be of short duration, as in a reported case in which the subject was successfully revaccinated with an interval of only three months elapsing since the previous one, which had been typical, passing through all the stages and leaving a characteristic scar.

As a general rule, it is best to vaccinate a child during the first year of life, again at puberty, and then every few years, for if there is no liability to the disease—that is, no need for vaccination—it will not take and no inconvenience will result; whereas, if it does take, that is positive evidence that the person would have been susceptible to the disease if exposed to it. In isolated cases, all persons who have been exposed should be vaccinated immediately. As it requires only six to eight days for vaccination to take effect—and there is some reason to believe that some degree of protection is afforded as early as the fourth day after the inoculation of the virus—and variola rarely develops before the fourteenth day, this process will almost invariably modify the disease so that varioloid will result, and in some instances this will be prevented. In case of an epidemic, no one should be exempt from vaccination, as at these times all are more liable to the disease and to successful vaccination than at other times, even though a comparatively recent scar can be shown. If no evidence of a "take" is seen in a few days, the pa-

tient should be revaccinated several times before immunity can be positively stated to exist. A case in this connection, which was reported in the army a few years ago, may be of interest.

A Chaplain in our army in the Philippines had been vaccinated a number of times, for a while presenting himself every week or two when new squads of men were lined up for the purpose. As none of the vaccinations were successful, he allowed himself to go for a couple of months or so without revaccinating, during which time he contracted the disease and died the third day of his illness. This simply indicates that there is a time at which one's immunity ceases, which time can in no way be surmised, and that during an epidemic the only safe course to pursue is to vaccinate repeatedly until a "take" is obtained or the epidemic danger is past.

As said above, vaccination is so thoroughly established that it needs no argument to prove its value, especially before intelligent members of the medical profession. However, much convincing evidence can be had on this subject, but, not wishing to take further time in quoting statistics, I will mention only one case—that of Germany, one of the most, if not the most, thoroughly vaccinated countries in the world. Shulz shows that since the operation of the German law the annual average cases of smallpox per one hundred thousand was, in the army of Germany, 4.94; of France, 169.72; of Austria, 374. During the Franco-German war (1870-71) the mortality from smallpox in the unvaccinated French army was 23,469, while that of the vaccinated German army was but 261. The German army since 1874, the date of more stringent laws, has enjoyed practical immunity up to 1902, a period of twenty-eight years—not a single death from smallpox, except an isolated case under peculiar circumstances in 1884-85.

CHRONIC GONORRHEAL SEMINO-VESICULITIS.*

R. M. COLMORE, M.D.
CHATTANOOGA, TENN.

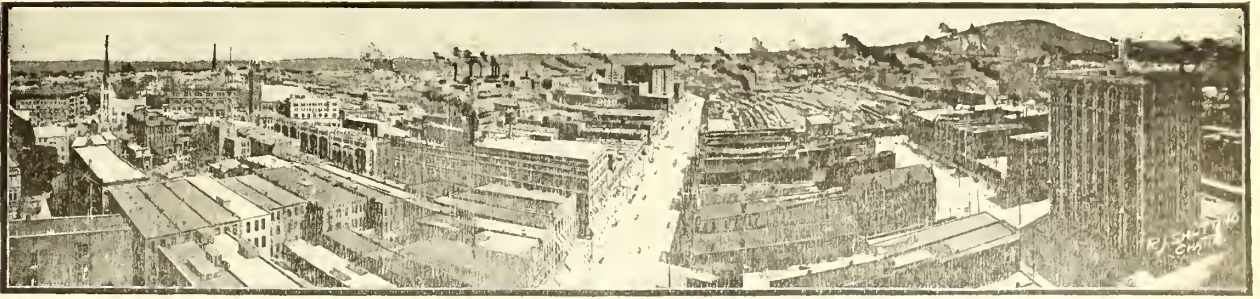
I do not present this paper with the idea of giving you anything new on the subject, but to call to your attention a condition which is sadly neglected. To me, this is one of the most interesting subjects which confronts a genito-urinary surgeon. I don't know why it should be, but seemingly very few of the profession ever make the diagnosis. A trained finger is all that is necessary, and this is very easily acquired, for the material is plentiful. The anatomy and physiology of the genito-urinary tract must be understood before much success can be derived from treatment. In this paper I must assume that the anatomy and physiology of the seminal vesicle is familiar to you all, but if not understood I would refer you to Dr. Eugene Fuller's elaborate article, which appears in his text-book of genito-urinary diseases. To Dr. Fuller belongs the credit of most all the pioneer work on this subject. The seminal vesicles can be felt by the finger tip pressed against the portion of the rectal wall which lies over them. To do this the finger must be well lubricated and be passed high up in the rectum, with the patient standing, his knees straight and body bent forward horizontally, or he may lie on his right side and draw the knees well up in front. The latter is my choice of position. In the normal vesicle, nothing, or very little, can be felt, but the diseased condition presents a very different picture. A little above and to the outside of the prostate can be felt a soft, boggy tumor, which almost disappears after a few strokes of the finger tip. I forgot to mention that this should be done with a full bladder, as this gives us a firmer base upon which to work. The expressed contents should always be examined microscopically, and usually there will be found a variety of bacteria. The gonococcus, colon

* Read before the Chattanooga Academy of Medicine.

bacillus, staphylococcus and streptococcus are nearly always found.

In questioning these patients, one of the most important points is to determine whether or not he has had at any time a swelled testicle, for if he has and his trouble has persisted, most likely one or both of the vesicles are diseased. It would seem from the chronic inflammation that the ducts from the vesicles would become strictured, but investigators have proved this not to be so; however, they often do become plugged by coagulated semen, or by the thick and tenaceous products of inflammation. Under such influence, the sacs are prevented from emptying themselves and contracting. If the pathological condition of the semen persists the muscular apparatus of ejaculation becomes weakened by overwork, and the result will be atony and distention of the sacs. It is useless to go into the long train of symptoms produced by this trouble. Every charlatan publishes them in his advertisements, and if we will only hunt for the condition as a routine measure the quack won't have such a good opportunity to profit from our negligence. Here I would like to make a plea to the busy doctor, who hasn't the time to give these unfortunates the proper care. Send the cases to a man who gives his whole attention to these diseases, and stop relying on "the sure shot," the untrained office assistant, and allowing the patient to use the treatment himself, when you haven't the time to give him. When a chronic vesiculitis is present all the injections and irrigations known will never effect a cure. One patient with this trouble told me his physician had prescribed nothing but Methylene Blue pills, and he had used a car load of them. An ordinary amount of common sense will go a long way towards curing any case of chronic gonorrhea. Make the diagnosis, and the treatment, though very long, will be successful. The diagnosis is as I said before made by the finger passed high up in the rectum, and in every case of chronic gonorrhea this should be looked for as a routine. The treatment, in order

to be effective, should aim to rid the parts of the inflammation, also to restore their function of ejaculation. Stripping the vesicle, as before described, once every five to seven days must be carried on for months, and each specimen must be compared with the previous one, in order to determine if the amount of coagulated semen is growing less. If the case improves as it should elements of pus, blood and bacteria should diminish. It is often noted before treatment that there is a certain amount of sexual irritation, which diminishes as the treatment progresses, leaving him for the time being with a feeling of impotency and loss of erection. This is, however, a favorable sign, for it shows that the patient on being rid of the chronic irritation is left sexually quiescent. This condition, however, is not lasting, for as the normal condition of the vesicle is approached the sexual function will be found to be satisfactory. If the sac be stripped immediately after coitus, and considerable pathological material expressed, all intercourse should be forbidden. But on the other hand, if the sac is found to empty itself, coitus practiced in moderation is beneficial. When convalescence is fully established, there is no reason to believe that the vesicles will return to their former condition, except through some sufficiently exciting cause. Nutritious diet and tonics often hasten resolution in the debilitated cases. Local treatment to the urethra and bladder should be stopped unless there is some very good reason for their use. The prognosis of these cases is good if the age of the patient is under forty. Beyond this it is hardly as good as regards a full restoration of lost sexual strength. This is an extensive treatment, often lasting from eight months to a year, but with patience on your part and a willing subject there is success ahead. You will have made a friend of your patient, who will sing your praises as long as he lives, and you will never find it necessary to publish your face in the paper as a great restorer of lost manhood.



HISTORIC CHATTANOOGA

Chattanooga is almost at the junction of three great States—Tennessee, Georgia and Alabama—and by a caprice of nature, the only site for city for miles in any direction. The primitive Indian saw here the advantages of a camping ground, and when the first white traders and trappers penetrated this region it was the great camping ground of the most populous Indian tribes in the central South.

During the Civil War the captains of both armies realized the strategic importance of Chattanooga, and the bloodiest battles of that sanguinary conflict followed for the possession of this key to the South, the final occupation of which by the Union army was the turning point of the war.

What the savage mind intuitively saw, what the military mind with scientific foresight discovered, the commercial mind has since appreciated, and nature's designs are now being realized with marvelous rapidity.

Until 1830 the little settlement on the bank of the Tennessee, which is now the city of Chattanooga, was known as "The Landing," this being the place where river voyagers would embark for up-river points, while those going down the river would disembark to avoid passage through the rapids of the Tennessee below Chattanooga.

From John Ross, a Cherokee chief, the name of the Landing was changed to "Ross' Landing," which it remained until 1840, when Chattanooga was incorporated.

From the time the Indians were removed by the government, in 1838, until the out-

break of the Civil War, Chattanooga grew slowly. In 1840 the population of the city numbered 500, including whites, Indians and negroes. The first census taken in 1870, following the close of the war, showed the population of the city to be 6,073. The forty years since that date have witnessed a marvelous transformation and the building of a community of 94,000 people.

CLIMATE.

The climate of Chattanooga and its surrounding district is what is known as a "year-round" climate. From one extreme of the United States the query arises, "Where shall we spend the winter?" From another extreme, "Where shall we spend the summer?" Chattanooga answers both questions to the satisfaction of all. Here the long, hot summers of the states of the extreme South and the rigid winters of the North and West are unknown.

The average temperature of the year is 60 degrees, the same as that of the northern part of Spain, the southern part of France, northern Italy, Greece, and the islands of Japan. But the range of the thermometer is much greater, enabling the farmers and trucksters to raise a larger variety of crops than in the countries named.

HEALTH.

Chattanooga's average elevation is 700 feet above sea level, 204 feet higher than Cincinnati. The city and county are nat-

ural health resorts by reason of the elevation, the mineral springs which abound, and pure air and equitable climate. The annual death rate in Chattanooga is 10.83 per 1,000 inhabitants. This demonstrates the healthfulness of the city when compared

with San Francisco, 12.89; Milwaukee, 13.21; Detroit, 13.29; Cleveland, 13.65; Memphis, 13.88; Louisville, 14.12; Nashville, 14.46; Atlanta, 14.49; New York, 16.23; Boston, 17.75, and New Orleans, 18.25.



Orchard Knob, Gen. Grant's Headquarters

Points of Interest Around Chattanooga

CHICKAMAUGA NATIONAL PARK AND FORT OGLETHORPE.

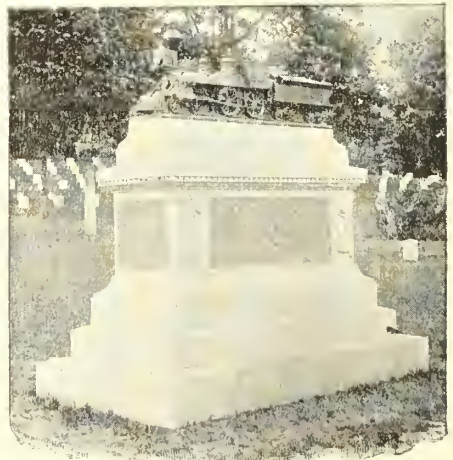
Take cars marked "Chickamauga Park," at any point on Market street, every thirty minutes, leaving Market and Fifth streets on the hour and half-hour. Large cars make the twelve-mile ride to the park quick and comfortable, where plenty of automobiles and carriages can be secured at reasonable rates for drives through the park. The Army Post is only five minutes' walk from the car station. Fare, 15 cents.

NATIONAL CEMETERY.

Take cars marked "East Lake Line," or "Oak Street." Cars every fifteen minutes on East Lake Line, and every ten minutes on the Oak street line. Fare, 5 cents.

MISSIONARY RIDGE.

Take cars marked "Oak Street Line,"



Andrews Raiders Monument, National Cemetery

and transfer to the "Ridge Car." Take car leaving Market and Fifth Streets on the hour. Do not miss this eight-mile ride. Fare, only 5 cents.

LOOKOUT MOUNTAIN.

Take cars marked "Alton Park" or "Lookout Mountain," every seven and one-half minutes, connecting at Incline Station, St. Elmo, with the Incline Railway to the top of the mountain. Cars on top of the mountain run to the Mountain House, Sunset Park and Point Lookout. The view from the car as it winds around the summit is one never to be forgotten, and well worth the trip to the mountain.

GOLF AND COUNTRY CLUB.

Take car marked "Riverview," every thirty minutes. This route crosses the Tennessee river and is a beautiful ride of three miles. Fare, 5 cents.

CAMERON HILL AND BOYNTON PARK.

Take cars marked "West Sixth Street," every fifteen minutes. The park is only a

short walk from the end of the line. A fine view of the city can be had from this point, while Lookout Mountain, Raccoon Mountain, Walden's Ridge, Tennessee River and



Hotel Patten, headquarters Tenn. State Medical Association, where meetings will be held.

Missionary Ridge stand out in the distance. Fare, 5 cents.

SPECIAL RATES.

Special rates to Lookout Mountain are made for parties, Sunday School picnics and excursions. Special cars can be chartered at reasonable rates.

LOOKOUT MOUNTAIN.

Lookout Mountain stands 1,700 feet above Chattanooga. St. Elmo, lying between the base of the mountain and its foothills, forms the city's nearest suburb. The summit is reached within thirty minutes from the business center, by two lines of electric cars, passing the hotels and depots and connecting with the Incline Railway at St. Elmo. The mountain is one of the most desirable resorts on this continent, and offers rest and recreation to the enfeebled, the overworked, or the pleasure-seeker. Reasonable rates can be obtained at the numerous hotels and boarding houses.

Broad, well-built boulevards traverse the Mountain Plateau. The most beautiful spot on the mountain has been preserved for a



Hamilton National Bank, tallest building in the city.

park. The United States government purchased "The Point" of Lookout Mountain to make it a fitting completion of the Chickamauga-Chattanooga National Military Park. The \$125,000 New York State Mor-

ground of redmen. The warlike Cherokees and their kinsmen, the Chickamaugas, dwelt in the valleys round about, and on its slopes their war parties made good against their tribal enemies their claim to the own-



Lookout Mountain Views

ument is located in Point Park and can be seen for miles from the surrounding country.

Among the mountains called of battle, Lookout deserves the first place in any history of the Southern Appalachians. Before the first Anglo-Saxon saw its wooded talus and grey-green cliffs from the opposite crest of Walden's Ridge, it was the battle-

ership of the "Far Look" Mountain. The precipitous cliff at its northern extremity was their signal height. The smoke of the alarm fire rising from its summit was the warrior's call to arms.

In the early settlement of Tennessee the cliff-crowned mountain at the toe of the moccasin became the battlefield of the races. Defeated in the great valley of East Ten-

nessee, the Indians retreated to their fastness on Lookout; and on the western slope of the mountains, within sight of a greater future battlefield, was fought the last decisive conflict with the allied tribes. John Sevier won it and broke the organized strength of the redmen, but for many years afterward the pioneers, drifting down the Tennessee from the older settlements on its headwaters, to the fertile valleys beyond the Cumberlands, watched furtively for the first glimpse of the sentinel mountain standing grim and silent at the portal of the ninety-mile gauntlet through the gorges. If the skyline was clear, all went well, but if a column of smoke was hanging above the signal heights, the hardy adventurers looked to their arms, refilled the priming pans of their rifles, and made bulwarks of the cargo to protect the women and children during the running fight, which would begin at the overhanging bluffs of the great mountain.

A peaceful half-century followed the dying out of the last Indian signal fire on the Point Rock, and then the distant murmur of a fiercer tide of conflict echoed from the cliffs of Lookout. One lambent autumn day the tide of civil war poured over the passes of the Raccoon to submerge the fields in Will's Valley and to rise in billows of blue



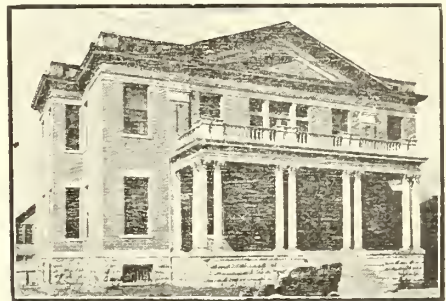
Lookout Mountain and Tennessee River

on the slopes of the historic mountain until the marching thousands of Rosecrans' left wing caught their first glimpse of Chattanooga and Missionary Ridge from its wooded summit.

The tide flowed onward, and a few days afterward the eastern palisades of Lookout flung back the thunders of Chickamauga to Chattanooga Valley. Then the tide surged

backward, and when the lines of circumvolution had been drawn about the beleaguered city in the great bend of the river, the bosom of the old mountain was scarred and furrowed with the intrenchments of the besieging army, and from summit and half-way heights the batteries hurled their messengers of death down upon the armed hosts in the valley.

The final act in the historic mountain's tragic drama was played on that November day when the mists of the valley thickened



Mountain City Club

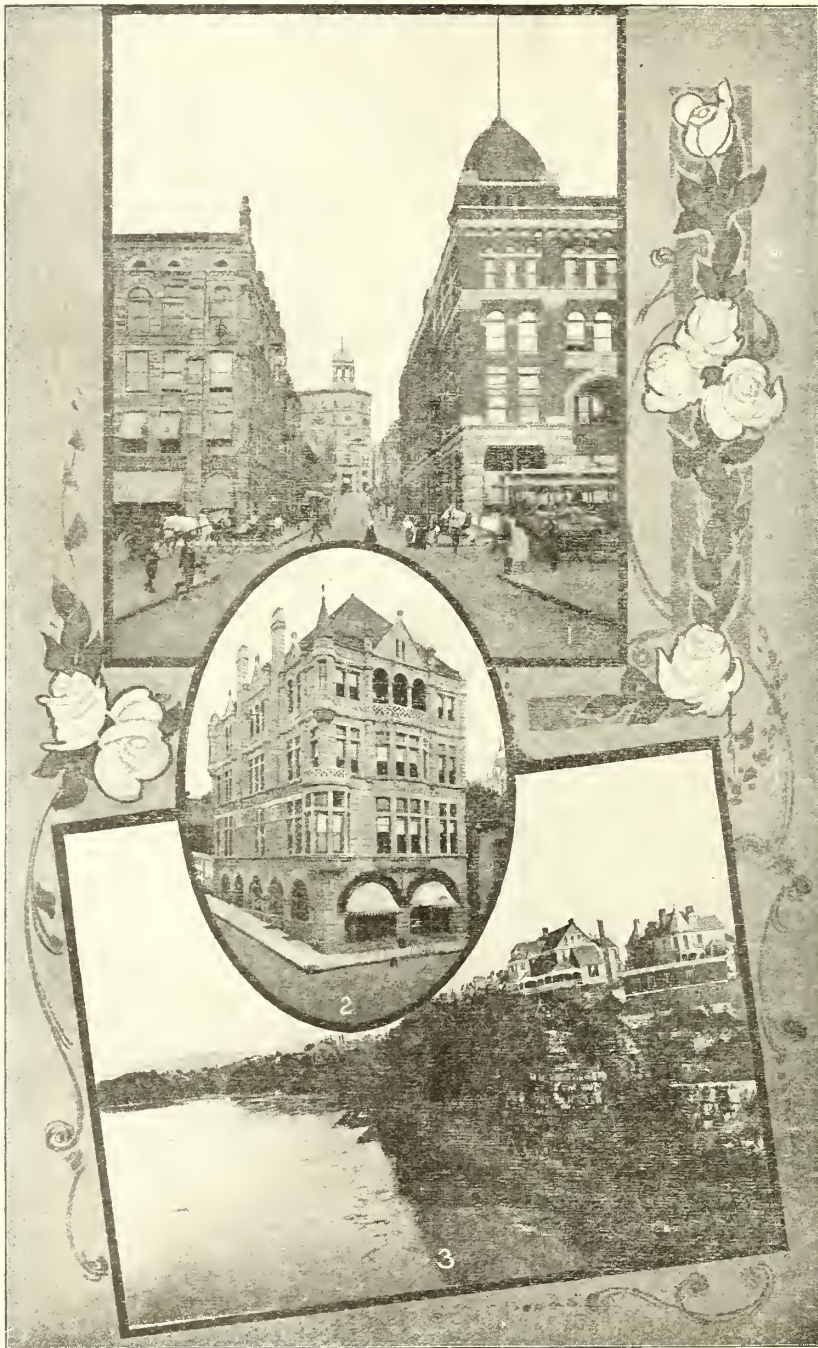
into sweating clouds on the wooded slopes, and Lookout hid its face as if to shut out the sight of carnage. All the world knows how "The Battle Above the Clouds" was lost and won, what deeds of heroism and brilliant courage were there enacted, and many a curious pilgrim has since stood upon the time-worn signal cliff to gaze down upon the scene of the mountain's final conflict.

The scars are healed now. The breastworks have become grassy mounds, and the sightseer has to be guided to the redoubts from which the bellowing cannon played upon the city, spread out in the valley below. But after the spring rains have washed away the litter of the years, the children, gathering arbutus and the fragile wind flowers on the slopes of the ancient mountain, find broken arrow-heads bedded in the mellow earth side by side with battered minie-balls and fragments of shattered shells; relics of the earlier and later struggles whose din has been re-echoed by the gray cliffs of old Lookout.

What pen can portray the matchless beauties that are unfolded from the moun-

tain heights? At every spot upon the brow, a bewildering panorama of landscape stretches forth. There are loftier moun-

gorges, but there is no spot on this western world where beauty is so charmingly united to sublimity, or where one-soul is so thrilled



1. Eighth Street, looking east from Market.

2. Masonic Temple, Seventh and Cherry Sts.

3. The "Cliff Dwellers" view from Tennessee River Bridge.

tains, more sublime stretches of precipice and beetling cliffs, taller peaks and deeper

without being awed by appalling surroundings; where the limpid lyrics of nature are

so interwoven with epics; where the melting hazes of purpling landscape dissolve into majestic stretches of towering peaks; where nature frowns and smiles, and woos the enchanted beholder thrilled by the glories and the majesty of God's handiwork.

CHICKAMAUGA PARK AND FORT OGLETHORPE.

The Chickamauga and Chattanooga National Military Park consists of two distinct parks—the park proper, which embraces the entire battlefield of Chickamauga, and the approaches.

The area within the legal limits of the park is about fifteen square miles. The approaches in the vicinity of Chickamauga are mainly roads over which armies reached and left the field.

The plan of establishing the park contemplates a restoration of the whole Chickamauga field, as nearly as can be, to its condition at the time of the battle. Except in the growth of timber, its features have changed but little since that time. The old roads, which were those of the battle, have been reopened and improved. As a result

Chickamauga Park is Fort Oglethorpe—the finest calvary post in the United States. A visit to this post is always interesting and well worth the trip.

The best, most comfortable and economical way to reach Chickamauga Park and Fort Oglethorpe is by the electric cars, which leave the city every thirty minutes, making the twelve-mile run one of the most pleasant and enjoyable of rides, and landing passengers directly at the entrance to the park and within five minutes' walk of Fort Oglethorpe.

The route is past the hotels and Terminal Station, through Rossville, Ga., and the famous Rossville Gap, near the beautiful



Lookout Mountain in the Distance



Fort Oglethorpe, home of the Eleventh Cavalry

of this work, carriages can now drive in all directions through the great forests and along the lines of battle. Steel observation towers have been erected at prominent points in the park.

Historical tablets and monuments to illustrate every important point of action on each side in the battle have been erected.

The fighting position of all batteries are marked by guns of the same kind used in battle, mounted upon cast iron carriages, painted so as to be an exact representation of the carriage of 1861.

Located just to the north and adjoining

Iowa monument and over Missionary Ridge—in view of Lookout Mountain.

At the end of the car line will be found automobiles and carriages in charge of competent and well informed guides for rides and drives over the seventy miles of improved roads in the park. Some of the guides are veterans who fought in the battle, and who take pleasure in explaining the great three-days' fight to visitors.

The maximum rates for automobiles and carriages are fixed by the Park Commission, which assures reasonable charges at all times.

Fare to the park on the large, comfortable electric cars is only fifteen cents.

ROADS AND AUTOMOBILING.

Five hundred automobiles owned by residents of Chattanooga are daily seen speeding over fine roads in all sections of the country, climbing mountains and ridges, winding through dense forests, and spying out all the scores of natural and scenic

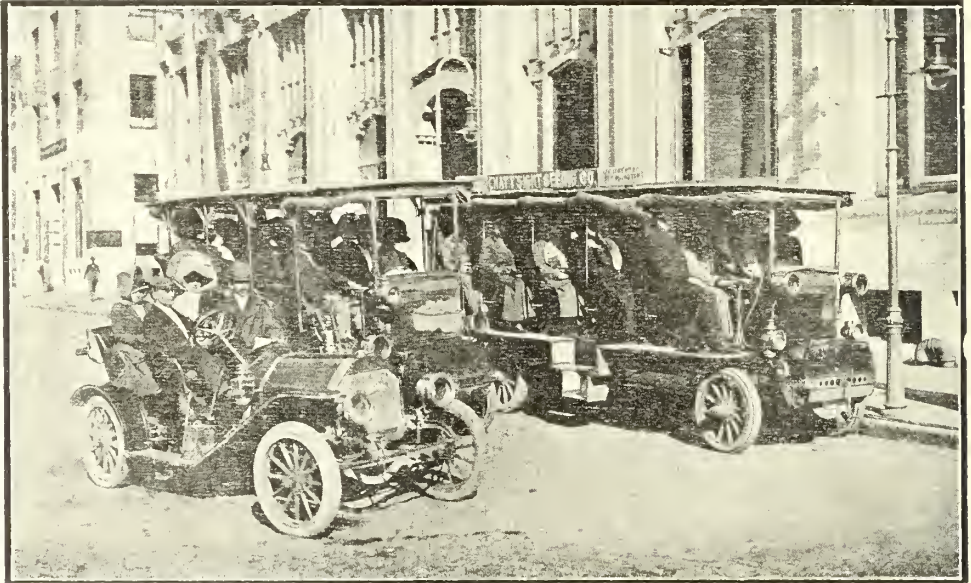
wonders in which the environs of the city abound. Good roads have become the pride of Hamilton County and Chattanooga, and as a result few Southern communities are as well provided with well-built, well-maintained thoroughfares.

The United States government has expended large sums of money in the construction of 100 miles of perfect boulevard. This extends along the crest of Missionary

and a dozen large and well equipped automobile garages.

CHATTANOOGA, CONVENTION CITY.

Chattanooga is a leading convention city of the South. National conventions have a large attendance when they meet in Chattanooga. This fact is due to the city location, its railroad facilities, its historic and scenic advantages, ideal climate and many surrounding points of interest.



Sight-Seeing Cars

Ridge, from which a striking panoramic view of the valleys on either side is obtained, and through the Chickamauga and Chattanooga National Military Park. Every section of the big military reservation is made accessible by means of well-built roads. Hamilton County has constructed in the county 495 miles of pike roads. At a great cost, tunnels have been built through Missionary Ridge, east of Chattanooga, and Stringer's Ridge, on the northwest, to enable the farmers and country people to bring their products to the city without having to haul over these heights.

The country roads are kept in repair by the workhouse forces under the direction of competent overseers, and as a result the work is done at a small cost to taxpayers.

Chattanooga has two automobile clubs

Convention visitors find the hotel facilities of the city complete in all respects. The million-dollar Hotel Patten, twelve stories high, is one of the finest and most modern hotel structures in the country. The Read House, opposite the Union Depot, has maintained a standard of good service since before the Civil War, when it was the old Crutchfield House. The Grand Hotel, a modern five story building, has just been erected opposite the new Terminal Station. Ten other hotels and numerous rooming houses insure accommodations for the largest national conventions that meet in the United States.

Convention visitors find time passes all too fast during their stay in this city. Look-out Mountain, "Nature's Roof Garden," and scene of the famed "Battle Above the

Clouds"; Missionary Ridge, with its broad boulevards and panoramic views; Chickamauga Park and the army post; the National Cemetery, where sleep 13,000 of those who wore the blue; the Confederate cemetery, the Tennessee river, with scenery rivalling that of the Hudson, or the Rhine—these and a score of other attractions, serve to make the visit of the convention delegates one to be long remembered.

Chattanooga's Public Auditorium, costing \$50,000 and seating 4,000 people, was built especially for the use of conventions. The Armory, numerous big churches, the city hall, Federal building, and three theaters, having a combined seating capacity of 20,000, are at the service of conventions.

TRANSPORTATION FOR STATE MEETINGS.

The following information is issued by the Southeastern Passenger Association for the benefit of those desiring to attend the Chattanooga meeting, April 9, 10 and 11.

The following instructions are published for your benefit, and if you will secure a

and form certificate-receipts secured from and executed by agents at starting points, evidencing payment of tariff rate to place of meeting, will be sold tickets for return trip, under the following rules, at one-half of the first-class fare in effect from place of meeting to original starting points, plus 50 cents, via routes traveled on going trip as specified on certificate-receipts. (When routing is via a steamship line, the steamship arbitrary will be added.)

Going Trip—It is necessary that such persons procure certificate-receipts from agents when going tickets are purchased. If through tickets to place of meeting cannot be procured at starting stations, persons should purchase to most convenient stations at which such through tickets can be obtained and there re-purchase through to place of meeting, procuring certificate-receipt from each agent from whom a ticket is purchased, and presenting all certificate-receipts to special agent at place of meeting. No refund of fare will be made be-



Drill Grounds, Fort Oglethorpe

certificate when you purchase your ticket you will save two-thirds of your return fare. In order to secure this rate, it is necessary to have 200 certificates. Be sure to ask for certificate when you purchase ticket to Chattanooga:

All delegates or members holding stand-

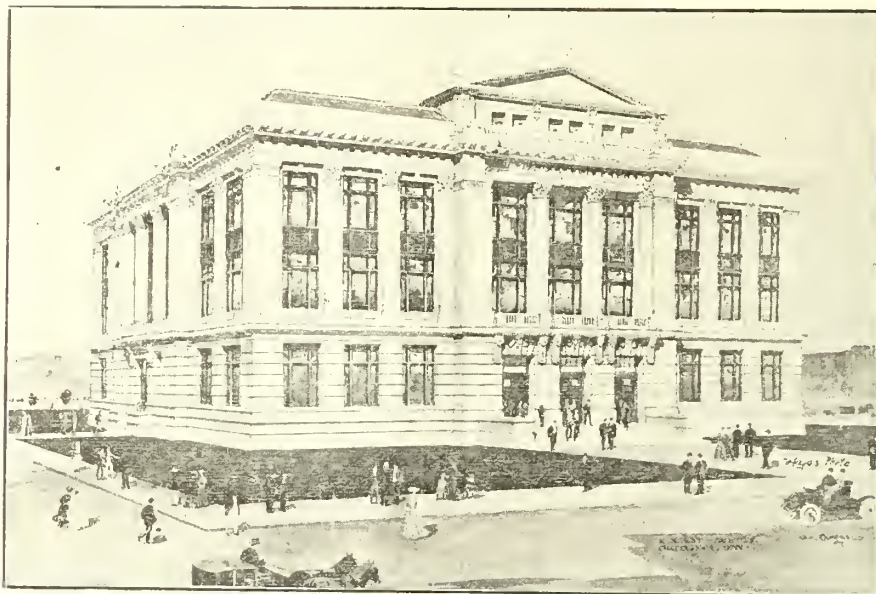
cause of failure to procure certificate-receipts.

Return Trip (a) Validation for Return—Certificate-receipts will not be honored for return tickets unless signed with ink by authorized officer of our meeting and by special agent appointed by carriers, who

will sign certificate-receipts only when satisfied that two hundred (200) or more delegates or members holding properly executed certificate-receipts have attended meeting. You therefore see how important it is to

ers they will not be honored, but will be forfeited.

Tickets for return trips issued in exchange for certificate-receipts will be limited to continuous passage by first train or



Chattanooga's New City Hall

procure certificate-receipts when purchasing going tickets.

Time Limits—No certificate-receipts procured more than three (3) days (not counting Sundays) prior to or more than two (2) days after date fixed for the commencement of meeting will be honored.

Certificate-receipt must be presented to

steamer leaving place of meeting after purchase.

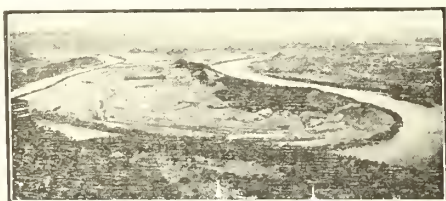
Certificate-receipts must be presented to ticket agents a sufficient time in advance of departure of trains or steamers to permit agents to properly issue tickets and check baggage. They will not be honored by conductors or pursers.

Return tickets at reduced rates will be sold only to stations within territory described by carriers in their tariffs announcing arrangements for this meeting.

No certificate-receipt evidencing payment of less than 75 cents for going ticket will be honored for reduced fare returning.

No certificate-receipt issued in connection with children's half-fare ticket, mileage, clergy, charity or employe's ticket, or any other form of transportation at less than the full regular first-class fare, will be honored for reduced fare returning.

Be sure to secure certificate-receipt from ticket agent when purchasing your ticket to place of meeting.



Moccasin Bend in Tennessee River

ticket agent during time meeting is in session or within three (3) days (not counting Sundays) prior to date of meeting.

Not Transferable—Neither certificate-receipts nor tickets issued in exchange therefor are transferable, and if presented by any other person than original purchas-

Programme of Meeting

Tuesday, April 9, 9 A. M.

1. "A Research on Heredity," by Wm. St. John, M.D., Bristol.
To open discussion, W. S. Farmer, Cookeville.
2. "Further Report on An Interesting Case of Katatonia," by J. W. Stevens, M.D., Nashville.
To open discussion, Geo. E. Petty, M.D., Memphis.
3. "Management of Syphilis," by W. F. Glenn, M.D., Nashville.
To open discussion, R. M. Colmore, M.D., Chattanooga.
4. "Etiology of Diabetic Glycosuria," by W. K. Vance, M.D., Bristol.
To open discussion, L. A. Yarbrough, M.D., Covington.

Tuesday, April 9, 2 P. M.

5. "Surgery of the Tonsil as Related to Chronic Diseases," by C. B. Wiley, M.D., Chattanooga.
To open discussion, G. C. Savage, M.D., Nashville.
6. "The Tonsils," by C. B. Jones, M.D., Knoxville.
To open discussion, E. C. Ellett, M.D., Memphis.
7. "The Traumatic Neuroses, Due to Actual or Alleged Injury from the Medico-Legal Standpoint," by Raymond Wallace, M.D., Chattanooga.
To open discussion, Jere L. Crook, M.D., Jackson.
8. "Rupture of the Gall Bladder, With Report of Cases," by Battle Malone, M.D., Memphis.
To open discussion, R. E. Fort, M.D., Nashville.
9. "The Consideration of Some of the Haemolytic Factors in Sub-Tropical Anaemia," by Henry W. Cheney, L.M., M.D., Chattanooga.
To open discussion, W. J. Breeding, M.D., Ravenscroft.
10. "Duodenal Ulcer," by J. S. Bachman, M.D., Bristol.
To open discussion, S. S. Crockett, M.D., Nashville.
11. "Sacro-Iliac Strain," by A. G. Nichol, M.D., Nashville.
To open discussion, S. M. Yancey, M.D., Dayton.

Tuesday, April 9, 8 P. M. Public Invited.

12. "Presidential Address"—A Brief Review of Medical Progress—by President C. J. Broyles, M.D., Johnson City.
 13. "Special Address on Medicine," by J. H. Musser, M.D., Philadelphia.
 14. "Special Address," by J. A. Witherspoon, M.D., Nashville. Subject: "Focal Infections and Their Relation to Systemic Disease."
- Reception, Hotel Patten, to President Broyles and visiting physicians.

Wednesday, April 10, 9 A. M.

15. "Placenta Previa; with Report of a Case," by M. A. Blanton, M.D., Baileytown.
To open discussion, H. H. McCampbell, M.D., Knoxville.
16. "The Development of Childhood," by H. C. Curtis, M.D., Algood.
To open discussion, Jas. H. Atlee, M.D., Chattanooga.

Special Order for 10 O'clock.

"Special Address: Mobilization of Ankylosed Joints by the Baer Method, by Michael Hoke, M.D., Atlanta, Ga.

"Special Address on Surgery," by Jabez N. Jackson, M.D., Kansas City, Mo. Subject: Membranous Pericolitis.

"Special Address on Eye," by L. Webster Fox, M.D., Philadelphia, Pa. Subject: Sliding Flap Operation for Cataract. Elliot Operation for Glaucoma.

17. "Intestinal Obstruction," by Richard A. Barr, M.D., Nashville.
To open discussion, R. M. McCown, M.D., Knoxville.
18. "Acute Anterior Poliomyelitis," by Jas. H. Atlee, M.D., Chattanooga.
To open discussion, Frank J. Runyon, M.D., Clarksville.
19. "The Treatment of Peritoneal Infections," by W. M. McCabe, M.D., Nashville.
To open discussion, E. E. Reisman, M.D., Chattanooga.

Wednesday, April 10, 2 P. M.

20. "Symposium—Pellagra"—
Etiology and Pathology, by Wm. Krauss, M.D., Memphis.
Symptoms and Diagnosis, by Louis Leroy, M. D., Memphis.
Treatment, by J. M. King, M.D., Nashville.
21. "Anaphylaxis, With Demonstration," by William Litterer, M.D., Nashville, and Carroll G. Bull, M.D., Knoxville.
To open discussion, Wm. Krauss, M.D., Memphis.
22. "The Treatment of Compound Fracture of Long Bones," by S. R. Miller, M.D., Knoxville.
To open discussion, Duncan Eve, M.D., Nashville.
23. "The Treatment of Fracture," by Robert Caldwell, M.D., Nashville.
To open discussion, J. B. Steele, M.D., Chattanooga.
24. "Laewen's Method of Anesthesia," by W. A. Bryan, M.D., Nashville.
To open discussion, B. B. Cates, M.D., Knoxville.
25. "Lithopedien; Presentation of Specimen; Report of Operation," by C. P. Fox, M.D., Greenville.
To open discussion, Thos. H. Phillips, M.D., Briceville.
26. "Injection Treatment of Hemorrhoids," by A. B. Cooke, M.D., Nashville.
To open discussion, S. R. Miller, M.D., Knoxville.

Wednesday, April 10, 8 P. M.

Smoker and Vaudeville by Chattanooga Academy of Medicine and Hamilton County Medical Society to Tennessee State Medical Association.

Thursday, April 11, 9 A. M.

27. "The Surgical Treatment of Acute Infections of the Uterus and Adnexa, with Especial Reference to Puerperal Septicemia," by J. A. Crisler, M.D., Memphis.
To open discussion, C. N. Cowden, M.D., Nashville.
28. "The Present Status of Brain Surgery; with Report of Cases," by L. L. Sheddan, M.D., Knoxville.
To open discussion, W. C. Campbell, M.D., Memphis.

29. "A Report of One Hundred Cases of Abdominal Section," by J. Hugh Carter, M.D., Memphis.
To open discussion, W. D. Haggard, M.D., Nashville.
30. "Treatment of Earache," by Walter Dotson, M.D., Gallatin.
To open discussion, J. F. Hill, M.D., Memphis.

Report of Nominating Committee, II A. M.

31. "The Short and Sensitive Utero-Sacral Ligament; Its Significance and Treatment," by M. M. Hannum, M.D., Maryville.
To open discussion, Geo. R. West, M.D., Chattanooga.
32. "Diphtheria," with Report of Cases," by O. W. Hill, M.D., Knoxville.
33. "A Plea for Larger Doses of Antitoxin in Laryngeal Diphtheria," by W. Scott Farmer, M.D., Cookeville.
To open discussion, A. F. Richards, M.D., Sparta.
34. "The Surgical Management of Exophthalmic Goiter," by W. D. Haggard, M.D., Nashville.
To open discussion, J. S. B. Woolford, M.D., Chattanooga.
35. "Empyema; Its Surgical Treatment; Report of Cases," by Edward T. Newell, M.D., Chattanooga.
To open discussion, W. L. Medling, M.D., Dyer.
36. "Indications for Cesarean Section," by H. M. Tigert, M.D., Nashville.
To open discussion, Elizabeth C. Kane, M.D., Memphis.
37. "Post-Operative Uremia," by E. M. Sanders, M.D., Nashville.
To open discussion, B. D. Bosworth, M.D., Knoxville.
38. "Iconoclasm in Surgery and Therapeutics for the Scientific Advancement of Our Profession," by E. Dunbar Newell, M.D., Chattanooga.
To open discussion, W. J. Matthews, M.D., Johnson City.
39. "Modern Methods in Diagnosing and Treating Emotional Paraphronia," by J. W. Macquillan, M.D., Chattanooga.
To open discussion, Jno. W. Stevens, M.D., Nashville.
40. "Salvarsan," by G. R. Livermore, M.D., Memphis.
To open discussion, C. F. Anderson, M.D., Nashville.
41. "Medical Inertia," by O. Dulaney, M.D., Dyersburg.
To open discussion, Melbourne Clements, M.D., Chattanooga.
42. "The Advantages and Disadvantages of Nitrous Oxide and Oxygen Anesthesia, From a Surgical Viewpoint," by W. T. Black, M. D., Memphis.
To open discussion, Roy Webb, M.D., St. Bethlehem.
43. "Conservative Surgery of the Uterine Adnexa," by J. B. Haskins, M.D., Chattanooga.
To open discussion, A. G. Kern, M.D., Knoxville.
44. "Demography," by S. M. Miller, M.D., Knoxville.
To open discussion, W. H. Hawkins, M.D., Greenville.
45. "Fundamental Principles of Psychotherapy," by S. T. Tucker, M.D., Memphis.
To open discussion, S. S. Crockett, M.D., Nashville.
45. "Hernia," by C. N. Cowden, M.D., Nashville.
To open discussion, Paul Dewitt, M.D., Nashville.

Automobile Ride to Points of Interest in and Around Chattanooga.

THE JOURNAL

OF THE

TENNESSEE STATE MEDICAL ASSOCIATION

Devoted to the Interests of the Medical Profession of Tennessee

Office of Publication, Jackson Building, Nashville, Tenn

APRIL, 1912

EDITORIALS**THE JOURNAL.**

This, the twelfth number, completes Volume IV, which in due time will be bound and delivered to every member of the association without further cost. A resolution is now before the House of Delegates, and will be acted upon at the Chattanooga meeting, seeking to discontinue its publication. We cannot predict what the action of that body will be, but venture to suggest that the JOURNAL has a very important task to perform—that of binding the profession of the State together. It has undertaken the leadership in behalf of organized medicine; has fought for higher principles amongst our members; has published not only the scientific matter furnished by our meetings, but has procured the best from members throughout the State. It has endeavored to inject enthusiasm into moribund county societies, and has willingly published contributions from all members. That the present volume has met with the approval of the profession at large is evident from the numerous congratulatory messages which have been received, for which we beg to extend our heartiest and sincerest thanks.

We sincerely trust that this, our first venture at a special edition, will meet with approval from our readers. We deemed it wise to make this a Chattanooga edition, and publish elsewhere only a few of the many interesting and historic sights to be seen during your visit to the meeting, and we trust you will be there.

If, in the wisdom of the House of Delegates, it be decided to continue the JOURNAL, we trust the principles we have advocated and the battles we have begun may be continued by our successors until the profes-

sion in this State will stand shoulder to shoulder, solidly organized, and ready to do the greatest service to the people in all matters pertaining to the health of its citizenship.

THE STATE BOARD OF HEALTH.

The recent upheaval in our State Board of Health conveys a lesson which the profession would do well to pause and seriously consider. To state the truth plainly, under the present law it is merely the plaything of partisan politics—a trick in the political game. And this is equally true, whether the Democratic, Republican or independent party happens to be the one in power.

It takes no sage to understand that this condition of affairs is not as it should be. It is a self-evident fact that the matter of public health, viewed from any standpoint, is the first and most important of all State interests. Efficient conduct of State institutions, wise administration of State offices, preservation of State credit, careful and honest disbursement of State funds—these are, of course, desirable. But how inexpressibly trivial they are in reality when compared with the great issue of public health! The assurance of a plethoric State treasury would be small consolation to a people brought face to face with the terrors of a death-dealing epidemic without adequate means of coping with it. All admit, though few apprehend, the truism that, in the final analysis, physical well-being is the one basic condition both of material prosperity and a virile citizenship.

The Board of Health is the only State department which is charged with the grave duty of safeguarding the public health. That this department should be maintained under a law which permits it to be buffeted about at the caprice of party demand or to meet the exigencies of party obligations is fundamentally wrong. Furthermore, such a condition of affairs stands as a positive menace, rendering possible, if not actually inviting, the very dangers which the department was established to prevent.

Viewed without prejudice or passion, public welfare requires that the State Board of Health be divorced absolutely and finally from politics. In no other way can it render the full measure of service of which it is capable and for which it was created. Politics and health interests cannot be made congenial bedfellows.

At the Knoxville meeting of the State Medical Association in 1908 a resolution was adopted instructing the Committee on Public Policy and Legislation to advocate an amendment to the present law providing that in the future vacancies occurring upon the State Board of Health should be filled from a list of nominations submitted by the several State medical organizations. The effort was made to secure this amendment at the 1909 session of the Legislature, but failed. The matter was not presented at the 1911 session.

This plan operates most successfully in at least two of our neighboring States—Alabama and Kentucky. The strongest argument in its favor is that it would enable the members of the medical profession, who understand health conditions and needs, to unite in the selection of men best fitted to administer the health affairs of our State government and place the responsibility for efficient conduct of the board where it naturally belongs.

Another plan, in certain aspects preferable, is to place the Board of Health under a non-partisan health commission vested with full authority to meet the ever-growing problems connected with the work.

These plans are merely mentioned at this time. When the State association convenes at Chattanooga, April 9, we trust the subject will receive earnest consideration. No more important matter can engage the attention of our profession, and the responsibility it involves should not be lightly brushed aside. It is ours to bear, whether we choose to recognize it or not.

The editor would distinctly disclaim any intention in the foregoing of reflecting in the slightest degree upon any past or present members or officials of the State Board of Health. Much that is worthy of com-

mendation has been accomplished, and the new administration has our hearty good will. The principle at stake, not the personnel of the department, has inspired these observations.

A. B. C.

THE RETIREMENT OF DR. ALBRIGHT.

Dr. J. A. Albright, Secretary of the State Board of Health for the past fourteen years, resigned on March 1, his resignation being accepted at a special meeting of the Board of Health on that date.

During Dr. Albright's tenure of office the scope of the board's activities were greatly broadened and the health conditions of the State at all times maintained at a high standard. He has long been a member of the Tennessee State Medical Association, and numbers his friends by the score, both within and without the profession. It is understood that he will resume active practice in his home town—Somerville.

Dr. R. Q. Lillard, of Lebanon, succeeds Dr. Albright. The new incumbent is well and favorably known, and the JOURNAL wishes for him a successful administration.

PREYING ON THE SICK.

As wolves in the wilds of Siberia follow traveling parties to devour the man or beast forced by weakness to remain behind, so patent medicine men lie and wait for the sick. That none who are afflicted by disease escape them is shown by the fact that already they are preying on those afflicted with pellagra. The following letter received by the *Journal of the American Medical Association* from a member of a State board of health of one of our neighboring States:

"I am sending you by express today the alleged remedy called EZ-X-BA, put up by the Dedmond Remedy Company as a cure for pellagra. They sell this remedy at \$5.00. I am anxious to have an analysis of this stuff so that I may stop, if possible, the swindling of the public by its sale. It has a large sale in the mill villages of the State—a class of people who seem to be the prey of all the charlatans, quacks and

swindlers of the country. Please send me report as soon as possible, and, if you can, take notice of same in the columns of the *Journal of the American Medical Association*."

As a result of this and similar inquiries, the United States Public Health and Marine Hospital Service has examined EZ-X-BA as well as another one called Pellagracyde. Examination showed these to be practically identical and to consist of a liquid and pills. The liquid was an aqueous, slightly acid solution of iron, aluminum, magnesium and calcium sulphates. The pills also consisted of these ingredients, mixed with starch and sugar. As suggesting the probable source of these nostrums, the report says: "A similar preparation could be prepared at a nominal cost from the partially-weathered, iron-bearing minerals occurring abundantly in the South by digestion with dilute sulphuric acid."

Regarding the worthlessness of these nostrums, Dr. Reid Hunt, of the Hygienic Laboratory, says that they "contain no substances which could be reasonably expected to have any curative value in this disease; on the contrary, they would tend still further to impair the digestion and so aggravate the condition."

It is hardly to the credit of individual States that they are impotent so far as concerns the protection of the people against quacks and nostrums. We must be thankful, therefore, to such national organizations as the American Medical Association and the United States Public Health and Marine Hospital Service, who, through their exposures of frauds, are in a measure able to protect the public.

THE CHATTANOOGA MEETING.

The Committee on Arrangements and the Committee on Scientific Work present elsewhere in this issue a completed programme for your approval. These committees have not attained the excellence of the treat which is herein offered without much work and very great personal sacrifice, and it is with very great pleasure that we com-

mend them. Analyzing the programme which is offered, both in its scientific and social features, we unhesitatingly pronounce it one of the best ever offered to the members of this association. The members of the Chattanooga profession are entitled to all credit for its present perfected state, and to none more than to those two faithful and efficient ex-officers of the Chattanooga Academy of Medicine—Drs. Atlee and Larimore.

As Chairman of the Committee on Arrangements, Dr. Atlee has given all of his energy to the perfection of an interesting social programme, and how well he has succeeded will be appreciated by everyone who attends the State meeting.

As a member of the Committee on Scientific Work, Dr. Larimore has been of invaluable assistance, both by hard work and by the various suggestions which have been incorporated and made use of. The Committee on Scientific Work present a programme of decidedly unusual merit and one which cannot fail to attract everyone who desires to learn. It is to be hoped that every member will avail himself of this very unusual opportunity to revel with his fellow-practitioners in a three-days' feast of the best that Tennessee's capable profession has to offer. We especially desire to commend that feature of the programme where the committee have deviated from former custom and have gone outside the State to invite men of international prominence to be with us. It cannot fail to be a source of much profit to all who hear Drs. Musser, Fox, Jackson and Hoke, for they are well-known leaders in their respective fields.

DEATHS

Dr. D. B. Plumlee, aged 50, died at his home near Celina, Tenn., March 9, after an illness of only a few days. He was a brother of Dr. B. S. Plumlee, of Nashville, and a son of Dr. W. F. Plumlee, who recently moved from Nashville to Butler's Landing.

NEWS NOTES AND COMMENT

Dr. Charles Mayo was a guest of Dr. W. D. Haggard while in Nashville, where he spent a few days recuperating. We are glad to report him entirely well from his recent severe illness.

Dr. W. T. Watson, one of Lexington's leading physicians, was severely injured in a runaway accident on March 10. He was returning from a professional call and his team became frightened and ran away, throwing him out of the vehicle. He suffered a fracture of his right femur, and was bruised about the face. We trust the doctor will soon recover.

Dr. C. V. Young, recently appointed city health officer of Lebanon, in conjunction with Dr. T. O. Bratton, of the county health office, are being highly commended by the citizens of Lebanon for their efforts to put Lebanon in a thorough sanitary condition. They are making a careful inspection of meat shops, grocery stores and restaurants, and promise soon to look into hotels and private residences.

Dr. G. C. Trawick of Nashville is confined at his home with lagrippe.

The handsome home of Dr. R. L. Burk, of Livingston, Tenn., was burned on the night of March 7. The loss, however, was entirely covered by insurance.

Dr. M. M. Hannum, of Maryville, was in the city recently and paid the JOURNAL a visit.

Dr. W. J. Winters, of Lebanon, Tenn., returned from New York City, where he has been doing post-graduate study.

The Southern Sociological Congress, which will convene in Nashville, May 7-10, will devote the last day, May 10, to matters of public health.

"Tuberculosis" will be discussed by Dr.

Charles L. Miner, of Asheville, N. C.; "The County Unit in the Development of Public Health," by Dr. C. W. Stiles, of Washington; "The Negro and Public Health," by Drs. Dowling and Seale Harris, of Mobile, and many other health topics of intense interest will be discussed by men of high character and known ability.

The Medical Examining Board has been called to meet in Nashville, March 11, for the purpose of examining applicants for the medical corps. The following applicants will appear: Dr. J. O. Nichols, Etowah; Dr. A. Smith, LaFollette; Dr. W. F. Massey, Dr. J. F. Gallagher and Dr. F. P. Head, Nashville. The Examining Board is composed of Dr. J. H. McCall, Surgeon-General; Capt. Larkin Smith and Capt. John W. Moore.

The Methodists of Tennessee, Arkansas and Mississippi, through their official delegates, at a recent meeting held in Memphis, appointed a committee to select a site for the new Tri-State Hospital which they propose to build in the near future. The Secretary reported \$45,000.00 already in hand. It is expected to reach an approximate cost of \$250,000.00.

The Davidson County Asylum has recently added an auto ambulance to its already modern equipment.

SOCIETY PROCEEDINGS

MAURY COUNTY.

The Maury County Medical Society met in regular session in the Century Club building at Columbia, Tenn., March 4, 1912, with a very large attendance. President Dr. H. O. Anderson presided. Drs. O. J. Porter, P. H. Faucett and W. S. Sheddan reported some very interesting and instructive cases.

Dr. L. E. Ragsdale read an excellent paper on "Arterio-Sclerosis," which was thoroughly discussed by all members present. At the December meeting we held our

election, which resulted in the election of Dr. H. O. Anderson, of Williamsport, President; Dr. J. G. Williamson, Jr., of Columbia, First Vice-President; Dr. James H. Jones, of Hampshire, Second Vice-President; Dr. M. M. Cook, of Santa Fe, re-elected Secretary and Treasurer. Delegate to the State Medical Association meeting, Dr. M. M. Cook; alternate, Dr. J. G. Williamson, Jr.

M. M. COOK, *Secretary*.

JEFFERSON COUNTY.

The Jefferson County Medical Society met at Dandridge, in the office of Dr. P. A. Tinsley, at 10:30 a. m., March 5, and was called to order by the President. The minutes of the previous meeting were read and approved. Two clinics were presented to the society by Drs. Tadlock and Tinsley, which were ably discussed by Drs. Anderson, Huggins, Roberts and Tittsworth.

Dr. J. I. Huggins read an excellent paper on "Puerperal Infection," which was discussed by Drs. Anderson, Roberts, Tinsley, Tittsworth and Tadlock.

A general discussion of the fee bill was entered into, and it was decided that fees should be more for services rendered.

The papers for the next meeting are as follows:

"Croup," by Dr. W. E. Roberts.

"Membranous Croup," by Dr. B. M. Tittsworth.

"Diphtheria," by Dr. P. A. Tinsley.

"Burns," by Dr. R. H. Newman, of Knoxville.

The society adjourned.

DR. W. L. TADLOCK, *President*.

DR. B. M. TITTSWORTH, *Secretary*.

HOOKWORM TREATMENTS.

The reports of nine Boards of Health in as many Southern States show that in the year ended December 31, 1911, 140,378 persons were treated for hookworm disease. Of course, a great many cases were treated by physicians which are not included in the above reports. The presence of infection has been demonstrated in 719 counties of

the 884 counties in ten Southern States, and definite infection surveys have been completed in 87 counties in nine of these States. For this infection survey 37,267 rural children from 6 to 18 have had microscopic examinations made. A definite sanitary survey has been completed in 125 counties, inspections of 43,448 rural homes having been made for this survey. The workers in the field have personally visited 5,225 physicians, have delivered 206 addresses to 4,900, and have sent to physicians 64,720 personal and circular letters. During the year 4,126 physicians have reported treating for hookworm disease 53,167 persons.

Nine thousand four hundred and fifty teachers have been reached by personal visit, 17,294 by letter, 15,448 by lectures at teachers' institutes, 43,393 by bulletins. More than 3,600 public lectures have been delivered to 451,877 people, and 908,436 bulletins on sanitation have been distributed to the people.

In nine States 85 counties have appropriated from county funds for the local expenses of county dispensaries for the free treatment of hookworm disease \$10,799.60, and at these dispensaries 74,005 persons have been treated.

And yet, in the face of such facts, there are said to be physicians in Tennessee who "don't believe in hookworm disease."

Extracts from letters on file in the office of the Secretary of the Tennessee State Board of Health:

March 3.

"C. C., 25 years old, treated for hookworm disease and improvement is very marked, having gained twenty pounds, and working every day. Was unable to work before treatment."

February 8, 1912.

"My '11-pound case' (gained 11 pounds in as many days) has gained twenty pounds on two treatments, this gain being noticed in four weeks."

February 18, 1912.

"Dr. S. has interested the president of the big mills, and he has posted placards in the mills advising the operatives to be examined for hookworm disease, stating that

he is going to submit a specimen for examination by the State Board of Health." (Since this letter was received the president of the mill referred to has had himself and his family examined. Sixty of the mill operatives have been examined and hookworm disease was found in more than half of them. These cases have been treated by the physicians in the town where the mill is located.)

"I think I have broken the record for young cases of hookworm disease. I examined a baby four months old a few days ago and found it infected. The baby's father and mother are both badly infected with hookworm disease. This child has been having convulsions for quite a while, and is badly nourished and 'dried up on the stalk' generally."

"I herewith submit report of results of treatment in the case of G., which you requested me to do. I began treatment by giving preliminary dose of epsom salts Saturday evening; followed it Sunday morning with twenty grains of thymol in divided doses, given two hours apart. Followed in two hours with salts. The worms came in hundreds; could be seen before the stools were washed. I have also treated one other case in the same way, and, aside from slight nausea, there were no unpleasant symptoms from the treatment."

"I gave P. C. a second treatment today for hookworm disease. Resulted in the expulsion of hundreds of the hookworms. Send me one dozen more mailing cases and some pamphlets." (The physician signing this letter has treated a large number of cases. He has had the satisfaction of relieving one entire family of fourteen persons from a condition of poverty to that degree of health which makes it possible for all of them to do a full day's work every day.)

"I found Dr. * * (representative of the Board of Health) a nice gentleman; not only so, but he was valuable to me. For twenty years I had been puzzled over so many cases of anemia in this mountain region that I gladly welcomed a ray of light. I had used diet and iron, but they got little

better. . . . I find a very large per cent of the people in this section affected with this scourge. (This doctor does his own microscopic work.) I have found cases in all ages ranging from 3 to 53 years of age. In one family of seven every one was affected. One of the girls had typhoid and was treated as usual; she seemed to linger in her recovery, which prompted me to examine her stools, as I had found all the rest of the family to have hookworm eggs. Her stools were loaded with eggs, too. Thymol seeming too harsh for her with her bowel tender from typhoid lesions, I gave her beta-naphthol, whereupon her temperature went down. Take that for what it is worth. . . . Thymol has been my treatment and has been very satisfactory."

These letters quoted from above are a very few of the very many containing statements similar to those given. Within the week this letter came to the State Board of Health office:

"The report of finding of hookworm disease in the specimen sent you came rather as a surprise. The patient has no definite symptoms except headache—and inability to stick to his work. Strength fails him, and it is such a case as we are apt to call a 'neurasthenic.' There is no pronounced anemia present, but there has been lately a little diarrhea and I thought of a colitis and had suspected the presence of amoebae rather than hookworms, . . . and was giving quinine colonic douches until I could hear from you . . . This case has been in many hands and now I should be able to bring about a cure."

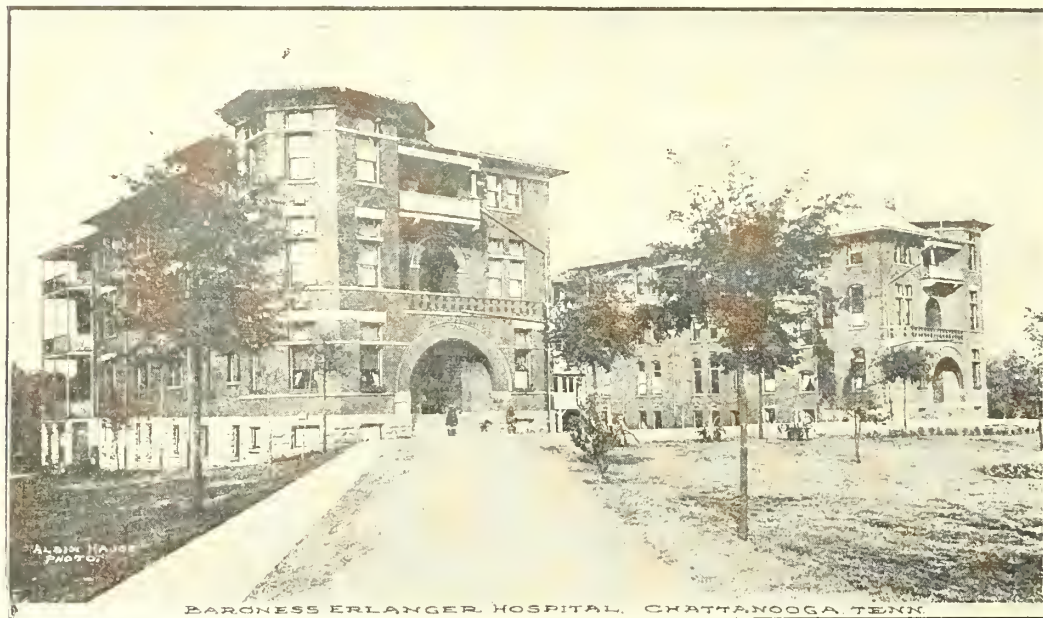
CHATTANOOGA'S HOSPITALS.

Chattanooga has four private hospitals and two public hospitals. The West-Ellis, The Highlands, Newell's Infirmary and The Woolford Infirmary constitute the private institutions with a combined capacity to exceed one hundred beds. They have all modern equipment for both medical and surgical cases and are accorded a large patronage. All these institutions extend a most cordial welcome to the visiting physi-

cians attending the State Medical Society meeting. The two public hospitals are Erlanger Hospital and the Hamilton County Hospital, the former with a capacity of 100, the latter 125. The County Hospital is mostly for the accommodation of chronic cases.

Erlanger Hospital is situated on beautiful

use of medicines, the Journal, with the assistance of the Council on Pharmacy and Chemistry and of the Chemical Laboratory, has exposed the false claims made in regard to the composition and the action of many proprietary medicines. This 'propaganda for reform in proprietary medicines' has been supplemented by the efforts of



BARONESSE ERLANGER HOSPITAL, CHATTANOOGA, TENN.

grounds consisting of four acres located on Harrison Avenue, within the city limits. The institution is now in its fourteenth year and has at all times been accorded the moral and material support of the profession of this entire section. The equipment is most complete in all departments. There are three operating rooms and a surgical amphitheater. A visiting staff of twenty-four physicians divided into summer and winter staffs attend all the charity cases.

"U. S. P. AND N. F. PROPAGANDA."

The following from the Journal of the American Medical Association (March 2, 1912, page 640) shows clearly to what extent medicine should endorse the propaganda of pharmacists who are trying to induce us to prescribe the ready-made mixtures in the Pharmacopoeia and the National Formulary:

"To further the intelligent and rational

pharmacists to promote the use of certain Pharmacopeial and National Formulary preparations whose composition is similar to that claimed for some of the proprietaries which have been exposed. This 'U. S. P. and N. F. propaganda' of the pharmacists falls short of our ideal, in that it merely aims to substitute a ready-made, usually complex and unscientific mixture of known composition for a ready-made, equally complex and unscientific mixture of unknown composition. But in so far as it promotes the use of preparations of known composition in place of those of unknown, uncertain or fraudulent character, the medical profession is indebted to pharmacy for the aid which has been given. The medical profession cannot, with good grace, criticise pharmacy for having chosen the path of least resistance when it attempted to wean physicians away from proprietary nostrums by encouraging the use of similar

official preparations. There is danger, however, that the pharmacists' propaganda may mean only that the physician who previously used certain proprietaries uncritically will be led to use just as uncritically the official preparation from which the proprietary was derived. For instance, the physician who used Glycothymoline and expected the wonderful results claimed by the manufacturers may use the alkaline antiseptic solution of the National Formulary with equally absurd expectations. Or the physician who gave his patient Churchill's or Fellows' Syrup of Hypophosphites will prescribe the Compound Syrup of Hypophosphites, U. S. P., in the same haphazard and unscientific way. Let us hope, therefore, that those physicians who substitute official preparations for proprietary nostrums will do so with a full realization that they are still in their professional swaddling clothes, and that they should make a serious effort toward individual, rational prescription writing."

In brief: If you must use a ready-made prescription, then give preference to those in the Pharmacopoeia or the National Formulary whose composition is known, and which are not exploited to the public. But, so far as you can, write prescriptions to fit the needs of the individual patient.

With a view of supplying our readers with reliable information regarding the standard, official drugs and preparations of the United States Pharmacopoeia and the National Formulary, as well as other reliable drug products, we have determined to occasionally discuss them in our journal. We will each month discuss two or more such preparations. This month we will mention the Elixir of Terpin Hydrate with Heroin, N. F.; Hexamethylenamine, U. S. P., and the Syrup of Tolu, U. S. P.

ELIXIR TERPINI HYDRATIS CUM HEROINA,
N. F.

The Elixir of Terpin Hydrate with Heroin contains 1 grain (0.065 gm.) of terpin hydrate and about 1-24 grain (0.0027 gm.) of heroin to each dose, the dose being 4 cc. (1 fluidram). It is

flavored with orange and saccharin. It also contains 40 per cent each of alcohol and glycerin.

Terpin hydrate is an efficient stimulant and antiseptic to the respiratory mucous membranes, exerting its action in the course of its excretion through the lungs. It diminishes excessive bronchial secretions in a rather specific manner. In fact, all acute and many chronic affections of the respiratory passages form the proper field for its therapeutical action.

Heroin is an artificial alkaloid (di-acetylmorphine). It is considered less toxic than morphine or codeine, both of which it resembles in its physiological effect, especially as a sedative in cough.

In case of objection to the use of heroin in this preparation, the Elixir of Terpin Hydrate with Codeine, N. F., may be substituted. This contains one-eighth grain of codeine to each teaspoonful dose; or the plain Elixir of Terpin Hydrate, N. F., may be prescribed. Terpin hydrate may also be prescribed in capsule form, either alone or in combination with other drugs.

This elixir is frequently prescribed in combination with equal parts of the Compound Syrup of White Pine (*Syrupus Pini Strobi Compositus*, N. F.), which makes an efficient remedy in numerous cases of bronchial affections.

Physicians are warned, when prescribing this elixir, to add "non-repetatur" in their own handwriting to prevent the forming of a possible heroin addiction, which is as difficult to overcome as the morphine habit.

HEXAMETHYLENAMINA, U. S. P.

Hexamethylenamina is a condensation product obtained by the action of ammonia upon formaldehyde. It occurs in colorless, lustrous, odorless crystals, very soluble in water and alcohol, and has an alkaline reaction.

This drug is rapidly absorbed and rapidly eliminated in the urine, although excretion may last several days. It is excreted partly unchanged and partly as formaldehyde, and has the property of ren-

dering this secretion sterile for a long time and in ridding it of bacteria. Its antiseptic power to arrest ammoniacal decomposition of this secretion is truly remarkable at times, and in this respect it ranks first among all *materia medica* products.

Permanent results are best obtained by continuing its administration until some time after the urine has become apparently sterile. In such cases, where the drug is indicated, but where the urine is alkaline, formaldehyde may not be liberated; in these cases the administration of the drug should be preceded by a course of benzoic acid.

Ordinary medicinal doses cause no general effects, as a rule, but in some susceptible persons it may cause gastric and renal irritation. The average dose is 4 grains (0.25 gm.), and the average daily dose from 15 to 30 grains (1 to 2 gm.).

Hexamethylenamina is an unstable chemical, and for this reason should generally be prescribed alone—that is, either reduced to a powder and inclosed in capsules, or in solution in some aromatic water. As a rule, however, capsules, and especially tablets of the drug, should not be prescribed, on the general principle that “the stomach and intestines cannot absorb any substance until it is reduced to the fluid form,” and these organs, being generally weak in disease, should not be given the added labor of first dissolving a drug in tablet form (and which may be so hard as to be insoluble).

While other liquid preparations may be prescribed with a solution of Hexamethylenamina, no acid-containing preparations should be so prescribed, as decomposition would be liable to ensue and thus defeat the prescriber's intent.

SYRUPUS TOLUTANUS, U. S. P.

Syrup of Tolu is one of the mild expectorant preparations of the Pharmacopoeia, and constitutes one of our best vehicles in those prescriptions that are intended for the relief of bronchial and pulmonary affections on account of its very agreeable flavor.

It contains 1 per cent of balsam of tolu. Its average dose is about 16 cc. (4 fluid-drams), although, being used almost exclusively as a vehicle, smaller doses are usually administered.

It finds its chief employment in such cases where the mucus is tenacious and is coughed up with difficulty.

In this connection it may be valuable to state that such adjuvants as bromides, codeine, chloroform, heroin, etc., are often greatly beneficial to expectorants when the cough is distressive.

Licorice, glycerin or acacia, when the fauces are excessively irritable and a demulcent is indicated.

Strychnine when the respiratory center has become weakened, and belladonna, compound spirits of ether, and especially lobelia, when bronchial catarrh excites asthma and anti-spasmodics are indicated.

CORNUTOL AND DIGITOL ACCEPTED FOR “N. N. R.”

In commenting on the admission of cornutol and digitol, two preparations of the H. K. Mulford Company, the *Journal A. M. A.* (March 9, 1912, pp. 701 and 705) reviews recent investigations by Edmunds and Hale, which showed the general unreliability of the advertised claims for proprietary digitalis and ergot preparations. Most of the manufacturers whose products were thus proved unreliable or worthless have apparently made no effort to correct the faults found. In justice it must be said, however, that one firm took the reports seriously and proceeded to put its house in order. The H. K. Mulford Company first published an acknowledgment that its products were not permanent, and promised that in future it would date its packages so that physicians might know the exact age of each preparation. As a next step, it submitted its products to the Council on Pharmacy and Chemistry for approval. The council having assured itself that the company's proprietary preparations of digitalis and of ergot—digitol and cornutol, respectively—were sold under proper claims and

precautions, has accepted them for inclusion with new and non-official remedies along with an exact statement of the strength to which the preparations are adjusted. How long it will be before the manufacturers of other proprietary digitalis and ergot preparations secure similar endorsements is as yet uncertain. It will unquestionably depend on the length of time that physicians continue to use preparations whose reliability is attested only by those who are interested in the financial success of the products. The action of the H. K. Mulford Company in this matter deserves the recognition of the medical profession.

AN INTERESTING ANNOUNCEMENT
IS MADE IN THIS ISSUE BY THE
H. K. MULFORD CO. CONCERNING
MENINGO-BACTERIN (MENIN-
GOCOCCUS VACCINE.)

Bacterin therapy is long past the experimental stage, and the immunizing effect of typho-bacterin, for instance, is thoroughly established, the results from its use being sufficient evidence of the worth of this method of controlling the spread of typhoid fever. Remarkable results likewise have followed the use of cholera-bacterin, and it is hoped that equally good results will follow the use of meningo bacterin in controlling epidemics of cerebro-spinal meningitis. While immunization with meningo-bacterin has thus far been used in relatively few cases it is entirely reasonable to believe that it will prove a most valuable aid in the suppression of epidemics of cerebro-spinal meningitis.

Like the other bacterins, meningo-bacterin is a suspension of the killed bacteria in normal saline solution (0.85 per cent.) The cocci are grown upon a serum agar for about twenty-four hours, then washed off and suspended in salt solution. They are counted by Wright's method to determine the number of cocci in one cubic centimeter of the suspension, then killed by heating to 60 degrees C. for one-half hour. After di-

lution of the thick suspension with normal saline solution (0.85 per cent) so that the two strengths are obtained, the now completed bacterin is subjected to rigid aerobic and anaerobic tests to assure the absence of live germs or spores; Guinea pigs are also injected to be certain that there are no harmful substances in the bacterin. Trikresol (0.25 per cent) is used as the preservative.

Meningo-bacterin is polyvalent, i.e., a number of different strains of meningococci are used.

DIRECTIONS.

The usual site for inoculation is the arm at about the insertion of the deltoid muscle. The dose is given subcutaneously and not into the muscle nor into the skin. An area about the size of a five-cent piece is painted with tincture of iodine. The syringe needle is plunged through this area. No after treatment is necessary.

The complete immunization treatment consists of three doses given at intervals of from five to ten days. The first dose is 500 million, the second dose 1000 million and the third dose 1000 million.

For children smaller doses should be used according to weight. It has been suggested that the unit of body-weight for a full dose be considered 150 pounds.

MENINGO-BACTERIN FOR IMMUNIZING IS SUP-
PLIED IN TWO DISTINCT STYLES
OF PACKAGES.

First—For immunizing one person there are supplied three syringes, each containing the proper amount for injection, designated respectively first, second and third doses. The first syringe contains the initial dose of 500 million killed meningococci, and the second and the third 1000 million each. The contents of the first syringe are to be injected as the initial dose, to be followed five or ten days later by the contents of the second syringe and again five to ten days later by the contents of the third.

Second—For immunizing ten persons, meningo-bacterin is supplied in hospital or board of health packages containing 30 ampuls or ten complete immunizing doses

The initial doses (500 million killed bacteria) are contained in the ampuls with the red label, the second doses (1000 million killed bacteria) in ampuls with the white label, and the third dose (1000 million killed bacteria) in ampuls with the blue label.

In each case the first injection is 500 million (red label), the second 1000 million (white label) is administered five to ten days later, and the third of 1000 million (blue label) is injected five to ten days following the second injection.

No syringe is supplied with the hospital-size package, since it is expected that physicians using the same will employ their own hypodermic syringe, after sterilization. The method of withdrawing the vaccine from the ampul is to moisten the rubber top or cap with a drop of *Liquor Cresolis* Comp., U. S. P., or 5 per cent solution of carbolic acid; push the needle through the drop of antiseptic on the rubber cap, and then invert the bottle and slowly withdraw the required amount for injecting, following the instructions for the three injections necessary as directed.

The H. K. Mulford Company also supply anti-meningitis serum prepared after the method of Flexner and Jobling, and they will mail upon request to the Philadelphia office, Mulford Working Bulletin No. 8, on Anti-Meningitis Serum, giving a detailed and impartial review of the literature.

BOOKS RECEIVED.

THE SURGICAL CLINICS OF JOHN B. MURPHY, M.D., at Mercy Hospital, Chicago. Volume I, Number I. Octavo of 133 pages, illustrated. Philadelphia and

London: W. B. Saunders Company, 1912. Published bi-monthly. Price per year: Paper, \$8.00; cloth, \$12.00.

PELLAGRA. By George M. Niles, M. D., Professor of Gastro-enterology and Therapeutics in the Atlanta School of Medicine, Atlanta, Ga. Octavo of 253 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1912. Cloth, \$3 net.

RECENT METHODS IN THE DIAGNOSIS AND TREATMENT OF SYPHILIS; (The Wassermann Serum Reaction and Ehrlich's Salvarsan). By Carl H. Browning, M.D., Lecturer in Clinical Pathology, University of Glasgow; Director Clinical Research Laboratory Western Infirmary of Glasgow, and Ivy McKenzie, M.S., B.S., M.B., Ch.B. Directors of Western Asylums' Research Institute, Glasgow; Physician to the Out-Patient Department, Western Infirmary, Glasgow. In collaboration with John Cruickshank, M.B., Ch. B., and Charles G. A. Chislett, M.B., Ch.B., Walter Gilmour, M.B., Ch.B., Hugh Morton, M.B., Ch.B., with an introduction by Robert Muir, M.A., M.D., F.R.S., Professor of Pathology in the University of Glasgow. Lea & Febiger, Publishers, Philadelphia.

INTERNATIONAL CLINICS. A quarterly of illustrated clinical lectures and especially prepared original articles on treatment, medicine, surgery, neurology, pediatrics, obstetrics, gynecology, orthopedics, pathology, dermatology, hygiene, and other topics of interest to students and practitioners. By leading members of the medical profession throughout the world. Edited by Henry W. Cattell, A.M., M.D., Philadelphia, with collaboration of Wm. Osler, M. D., Oxford; Jno. H. Musser, M.D., Philadelphia; A. McPhedran, M.D., Toronto; Frank Billings, M.D., Chicago; Chas. H. Mayo, M.D., Rochester; Thos. H. Rotch, M.D., Boston; Jno. G. Clark, M.D., Philadelphia; Jas. J. Walsh, M.D., New York; J. W. Ballantype, M.D., Edinburgh; John Harrold, M.D., London; Richard Gretz, M.D., Vienna. With regular correspondents in Montreal, London, Paris, Berlin, Vienna, Leipsic, Brussels and Carlsbad. Volume I. Twenty-second series; 1912. Price, \$2. J. B. Lippincott & Co., Philadelphia and London.

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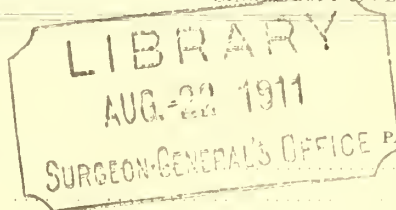
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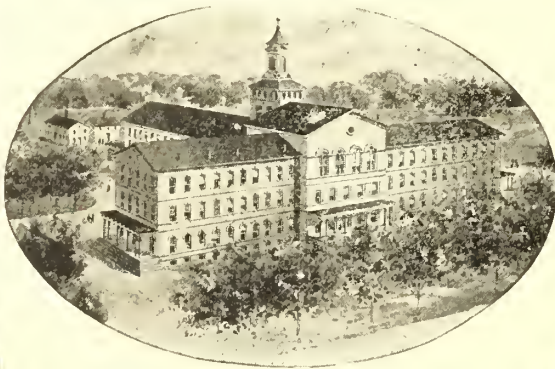
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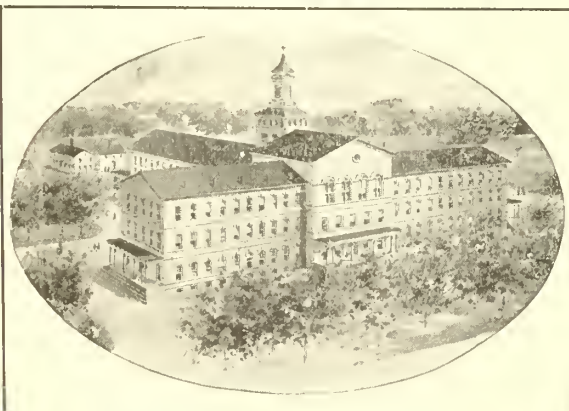
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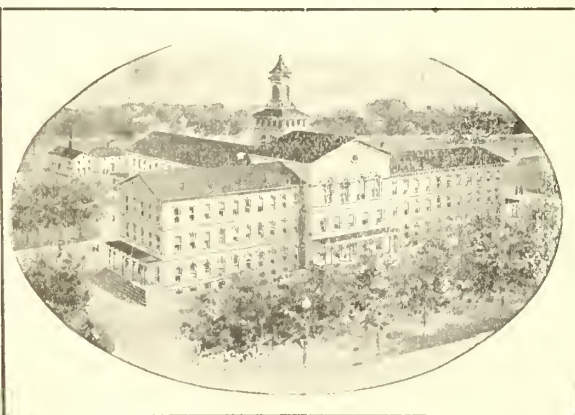
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